

حمل الآن

مجاناً وحصرياً

المراجعة رقم (1)

اختبار شهر ابريل



Important questions on unit three



First Multiple choice questions

1 In the given figure :



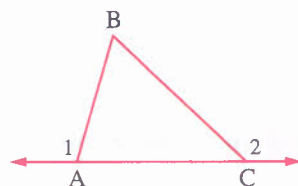
Which of the following statements is true ?

- (a) $AB < CD$ (b) $AC < BD$ (c) $AC > BD$ (d) $AC = BD$

2 In the given figure :

If $AB < BC$

Which of the following statements is true ?



- (a) $m(\angle 1) > m(\angle 2)$
(b) $m(\angle 1) = m(\angle 2)$
(c) $m(\angle 1) < m(\angle 2)$
(d) $m(\angle 1) \geq m(\angle 2)$

3 If the length of two sides in a triangle is 6 cm and 3 cm. , what interval does the length of the third side belong to ?

- (a) $[3, 9[$ (b) $]3, 9]$ (c) $[3, 9]$ (d) $]3, 9[$

4 In $\triangle ABC$: $m(\angle B) = 100^\circ$, which of the following statements is true ?

- (a) $AB > AC$ (b) $AB < AC$ (c) $AB = AC$ (d) $BC > AC$

5 In $\triangle ABC$: $m(\angle B) = 70^\circ$, $m(\angle C) = 50^\circ$, which of the following statements is true ?

- (a) $AB < AC$ (b) $BC > AC$ (c) $AB = AC$ (d) $BC < AB$

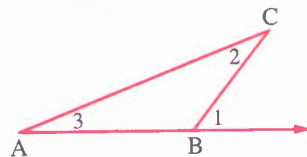
6 In $\triangle ABC$ which is right-angled at B , which of the following statements is true ?

- (a) $AC = AB$ (b) $AC < AB$ (c) $AC > AB$ (d) $BC > AC$

7 In the given figure :

If $m(\angle 2) > m(\angle 3)$

Which of the following is true ?

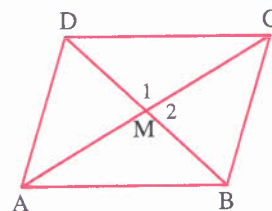


- (a) $m(\angle 1) > m(\angle 2) > m(\angle 3)$ (b) $m(\angle 2) > m(\angle 3) > m(\angle 1)$
(c) $m(\angle 2) > m(\angle 1) > m(\angle 3)$ (d) $m(\angle 1) > m(\angle 3) > m(\angle 2)$

8 In the given figure :

ABCD parallelogram , $m(\angle 1) > m(\angle 2)$

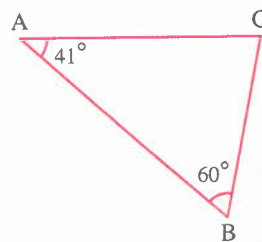
Which of the following is true ?



- (a) $AB > BC$ (b) $AB = BC$
(c) $AB < BC$ (d) $DC < AD$

9 In the given figure :

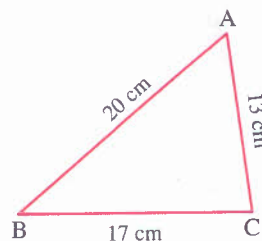
What is the correct ascending order of the lengths of the sides of the triangle ?



- (a) $BC < AC < AB$ (b) $AC < AB < BC$
(c) $BC < AB < AC$ (d) $AB < BC < AC$

10 In the given figure :

What is the correct ascending order for the measures of the angles of a triangle ?

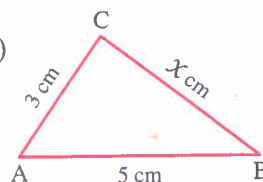


- (a) $m(\angle B) < m(\angle A) < m(\angle C)$
(b) $m(\angle C) < m(\angle B) < m(\angle A)$
(c) $m(\angle B) < m(\angle C) < m(\angle A)$
(d) $m(\angle A) < m(\angle B) < m(\angle C)$

11 In the given figure :

What is the set of values of x that verify that : $m(\angle A) > m(\angle B)$

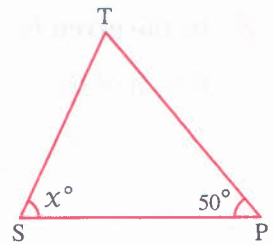
- (a) $2 < x < 8$ (b) $3 < x < 8$
(c) $0 < x < 8$ (d) $x > 3$



12 In the given figure :

What is the set of x values that verify that : $TP > ST$

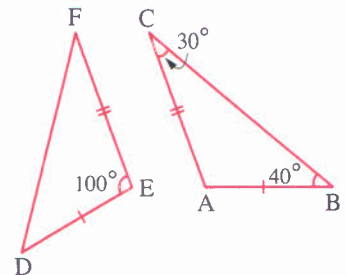
- (a) $x > 50$ (b) $50 < x < 180$
(c) $50 < x < 130$ (d) $x < 50$



13 In the given figure :

Which of the following statements is true ?

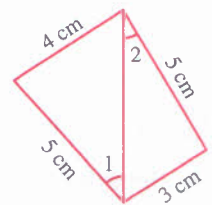
- (a) $FD > CB$ (b) $FD < CB$
(c) $FD = CB$ (d) $FD \geq CB$



14 In the given figure :

Which of the following statements is true ?

- (a) $m(\angle 1) > m(\angle 2)$ (b) $m(\angle 1) = m(\angle 2)$
(c) $m(\angle 1) < m(\angle 2)$ (d) $m(\angle 1) \leq m(\angle 2)$



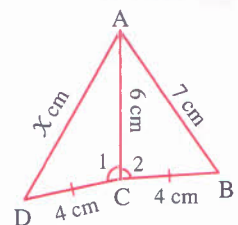
15 In the given figure :

What is the inequality that expresses the set of values

of x that satisfy :

$$m(\angle 1) > m(\angle 2)$$

- (a) $2 < x < 10$ (b) $x > 7$
(c) $7 < x < 10$ (d) $x < 10$

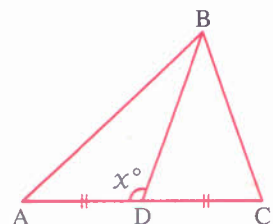


16 In the given figure :

What is the inequality that expresses the set

of x values that make : $AB > BC$

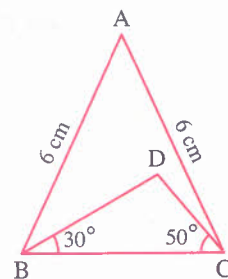
- (a) $0 < x < 180$ (b) $90 < x < 180$
(c) $0 < x < 90$ (d) $x > 90$



17 In the given figure :

Which of the following is true ?

- (a) $m(\angle ABC) < m(\angle ACB)$
- (b) $m(\angle ACD) < m(\angle ABD)$
- (c) $m(\angle ACD) > m(\angle ABD)$
- (d) $m(\angle ACD) = m(\angle ABD)$



18 $\triangle ABC$ is right-angled at B, $\overline{BD} \perp \overline{AC}$ what is the projection of $\overline{BD}$ on $\overleftrightarrow{AC}$?

- (a) point A
- (b) point B
- (c) point C
- (d) point D

19 The length of projection of line segment on a parallel straight line to it The length of the original line segment.

- (a) $<$
- (b) $>$
- (c) $=$
- (d) $\neq$

20 A line segment of length 4 cm. is perpendicular to a known straight line. What is the length of the projection of the line segment on the known straight line ?

- (a) 4
- (b) 2
- (c) 1
- (d) 0

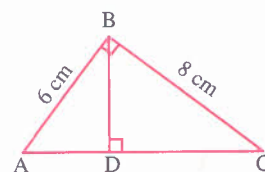
21 ABCD is a square, $\overline{AC} \cap \overline{BD} = \{M\}$ What is the projection of $\overline{DC}$ on $\overleftrightarrow{AC}$?

- (a) $\overline{AB}$
- (b) $\overline{MC}$
- (c) $\overline{AC}$
- (d) $\overline{CB}$

22 In the given figure :

What is the length of projection of $\overline{BC}$ on $\overline{BD}$?

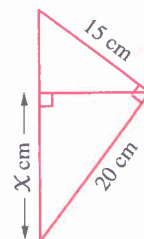
- (a) 3.6 cm
- (b) 6.4 cm
- (c) 4.8 cm
- (d) 0



23 In the given figure :

What is the value of X ?

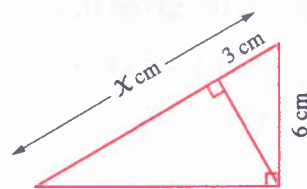
- (a) 16
- (b) 9
- (c) 12
- (d) 20



24 In the given figure :

What is the value of x ?

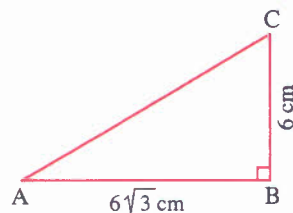
- (a) 3 (b) 9
(c) 12 (d) 6



25 In the given figure :

What is the length of projection of $\overline{AB}$ on $\overrightarrow{AC}$?

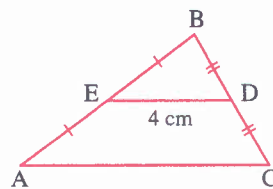
- (a) 12 cm. (b) 9 cm.
(c) 6 cm. (d) 3 cm.



26 In the given figure :

What is the length of projection of $\overline{ED}$ on $\overrightarrow{AC}$?

- (a) 2 cm. (b) 4 cm.
(c) 8 cm. (d) 0



27 A circle with radius length 5 cm. What is its diameter length ?

- (a) 2.5 cm. (b) 5 cm. (c) 10 cm. (d) 25 cm

28 What is the circumference of a circle with a diameter length 16 cm. ?

- (a) 16 cm. (b) 16π cm. (c) 8π cm. (d) 64π cm.

29 What is the area of a circle with a diameter length 12 cm. ?

- (a) 12π cm² (b) 144π cm² (c) 36π cm² (d) 6π cm²

30 What is the length of the radius of a circle with a circumference of 22π cm. ?

- (a) 22 cm. (b) 11 cm. (c) 11π cm. (d) 22π cm.

31 What is the diameter length of a circle whose area is 144π cm² ?

- (a) 12 cm. (b) 6 cm. (c) 144 cm. (d) 24 cm.

32 If the circumference of a circle = C and the length of the circle's diameter = d what is the value of $\frac{C}{d}$?

- (a) π (b) $\frac{1}{2}\pi$ (c) 2π (d) $\frac{3}{2}\pi$

33 In the given figure :

If $MA = 5\text{ cm}$, $AB = 2\text{ cm}$.

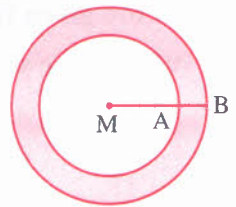
What is the area of the colored part ?

(a) $24\pi\text{ cm}^2$

(b) $4\pi\text{ cm}^2$

(c) $49\pi\text{ cm}^2$

(d) $25\pi\text{ cm}^2$



34 In the given figure :

If $(\pi \approx \frac{22}{7})$

First : What is the volume of the cylinder ?

(a) 220 cm^3

(b) 770 cm^3

(c) 35 cm^3

(d) 110 cm^3

Second : What is the lateral area of the cylinder ?

(a) 220 cm^2

(b) 770 cm^2

(c) 35 cm^2

(d) 110 cm^2

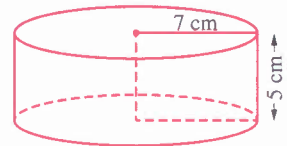
Third : What is the total area of the cylinder ?

(a) 264 cm^2

(b) 374 cm^2

(c) 528 cm^2

(d) 220 cm^2



35 A right circular cylinder has a volume of $320\pi\text{ cm}^3$ and a height of 20 cm. What is the length of its base diameter ?

(a) 2

(b) 4 cm.

(c) 8 cm.

(d) 16 cm.

36 A triangular right prism whose a base is an equilateral triangle with a side length of 5 cm. If the height of the prism is 4 cm, what is its lateral area ?

(a) 15 cm^2

(b) 30 cm^2

(c) 60 cm^2

(d) 240 cm^2

37 In the given figure :

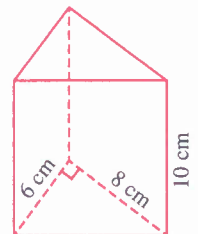
What is the volume of the right triangular prism ?

(a) 480 cm^3

(b) 240 cm^3

(c) 2400 cm^3

(d) 120 cm^3



38 A right pentagonal prism has a height of 8 cm and a volume of 168 cm^3 . What is the area of its base ?

(a) 1344 cm^2

(b) 176 cm^2

(c) 21 cm^2

(d) 18 cm^2

39 A right pentagonal prism has a regular pentagonal polygon with an area of 10 m^2 , the area of one of the lateral rectangles is 9 m^2 . What is the total area of the prism ?

- (a) 19 m^2 (b) 38 m^2 (c) 55 m^2 (d) 65 m^2

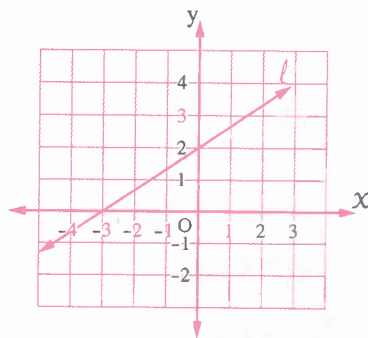
40 What is the length of the radius of the circle whose center is $(-2, 3)$ and passes through the point $(2, -1)$?

- (a) 5 unit of length. (b) $4\sqrt{2}$ unit of length
(c) 2 unit of length (d) 3 unit of length

41 In the given figure :

What is the slope of straight line l ?

- (a) $-\frac{3}{2}$
(b) $-\frac{2}{3}$
(c) $\frac{3}{2}$
(d) $\frac{2}{3}$



42 If $\overline{AB}$ is the diameter of a circle where $A(3, -4)$, $B(-3, -2)$ What is the surface area of the circle in square units ?

- (a) 10π (b) $2\sqrt{10}\pi$ (c) 20π (d) 80π

43 What is the distance of point $A(3, 4)$ from origin O ?

- (a) 3 unit of length. (b) 4 unit of length
(c) 5 unit of length (d) 1 unit of length

44 If the slope of the straight line passing through the points $(2, 4)$, $(3, k)$ is 1, what is the value of k ?

- (a) 3 (b) 1 (c) 5 (d) 6

45 If the slope of the straight line passing through the points $(3, 1)$, $(k, -4)$ is undefined, what is the value of k ?

- (a) 1 (b) 3 (c) -4 (d) -3

46 If the points $A(1, 1)$, $B(2, 2)$, $C(3, k)$ are collinear, what is the value of k ?

- (a) 1 (b) 2 (c) 3 (d) 0

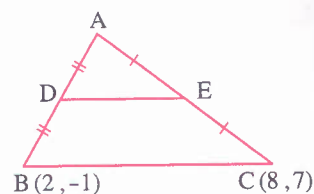
47 What is the distance between the two points $(3, a)$, $(-1, a)$?

- (a) 3 unit of length. (b) 4 unit of length
(c) 9 unit of length (d) 16 unit of length

48 In the given figure :

What is the length of $\overline{DE}$?

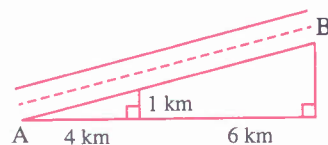
- (a) 10 unit of length. (b) 5 unit of length
(c) 6 unit of length (d) 8 unit of length



49 In the given figure :

What is the height of the end of inclined road (B) above the ground?

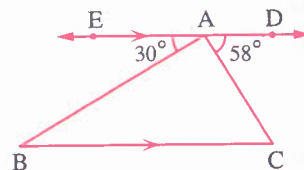
- (a) 2.5 km. (b) 4 km.
(c) 5 km. (d) 6 km.



Second Essay questions

1 In the given figure :

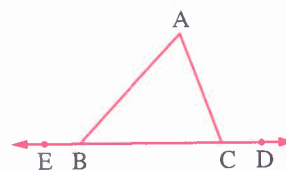
Prove that : $AB > AC$



2 In the given figure :

$AB > AC$

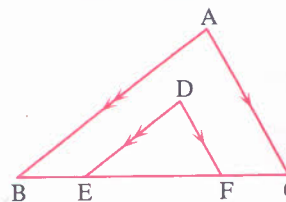
Prove that : $m(\angle ABE) > m(\angle ACD)$



3 In the given figure :

$AC < AB$

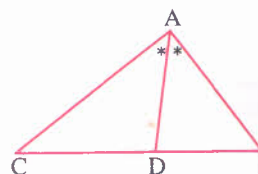
prove that : $DE > DF$



4 In the given figure :

$\overline{AD}$ bisects $\angle BAC$, $D \in \overline{BC}$

prove that : $AC > DC$



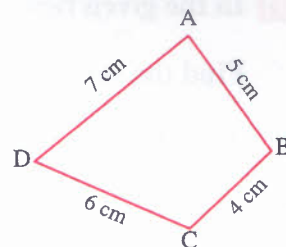
5 In the given figure :

ABCD is a quadrilateral in which :

$AB = 5 \text{ cm.}$, $BC = 4 \text{ cm.}$,

$CD = 6 \text{ cm.}$, $DA = 7 \text{ cm.}$

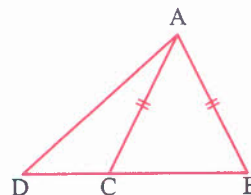
Prove that : $m(\angle ABC) > m(\angle ADC)$



6 In the given figure :

$AB = AC$, $D \in \overrightarrow{BC}$

Prove that : $AD > AB$

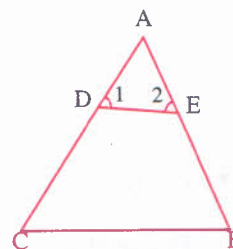


7 In the given figure :

$AC > AB$,

$m(\angle 1) = m(\angle 2)$

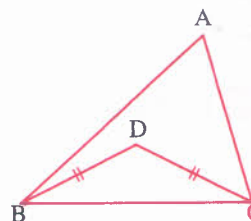
Prove that : $DC > EB$



8 In the given figure :

$AB > AC$, $DB = DC$

Prove that : $m(\angle ACD) > m(\angle ABD)$

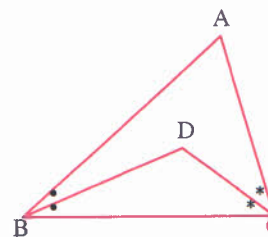


9 In the given figure :

$AB > AC$, $\overrightarrow{BD}$ bisects $\angle ABC$,

$\overrightarrow{CD}$ bisects $\angle ACB$

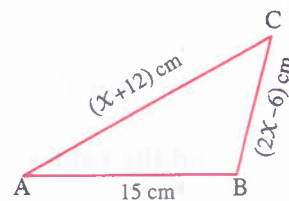
Prove that : $BD > CD$



10 In the given figure :

Find the set of values of X that satisfy

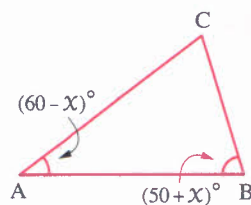
$m(\angle A) < m(\angle B)$



11 In the given figure :

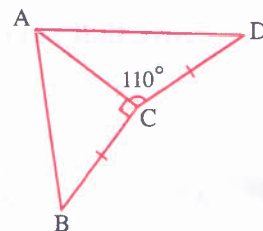
Find the set of values of x that satisfy

$$AC > BC$$



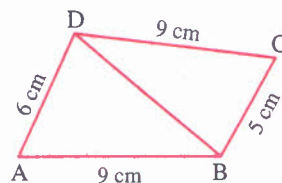
12 In the given figure :

Prove that : $AD > AB$



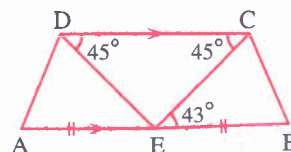
13 In the given figure :

Prove that : $m(\angle ABD) > m(\angle CDB)$



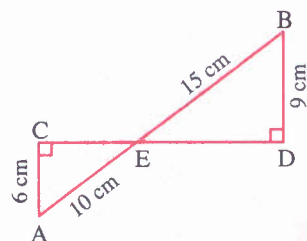
14 In the given figure :

Prove that : $AD > BC$



15 In the given figure :

Find : the length of projection of $\overline{AB}$ on $\overleftrightarrow{CD}$

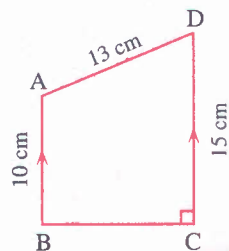


16 In the given figure :

ABCD is right trapezium

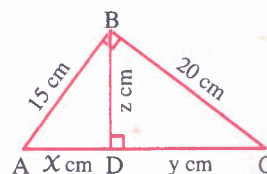
① What is the length of projection of $\overline{AD}$ on $\overleftrightarrow{DC}$?

② What is the length of projection of $\overline{AD}$ on $\overleftrightarrow{BC}$?

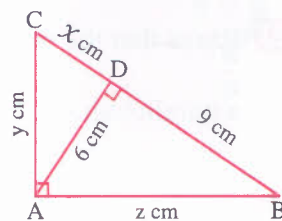


17 In the given figure :

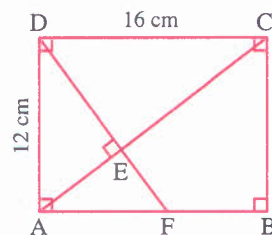
Find the values of : x, y, z



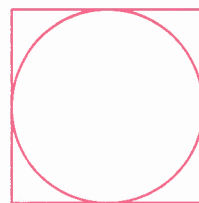
- 18 In the given figure :**
Find the values of : x , y , z



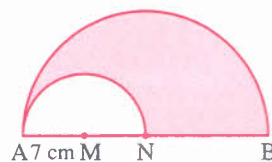
- 19 In the given figure :**
What is the length of $\overline{EF}$?



- 20 In the given figure :**
If the circumference of the circle is 50.24 cm.
Find : The area of the square (given that $\pi \approx 3.14$)



- 21 In the given figure :**
Calculate the perimeter and area of the colored part
(Note that $\pi \approx \frac{22}{7}$)



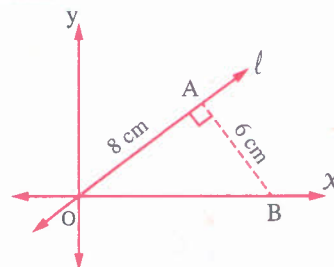
- 22** A right quadrilateral prism with a base in the form of a rectangle with dimensions 6 cm , 5 cm. Its total area is 280 cm^2 . Find its volume.

- 23** A right circular cylinder has a volume of $160 \pi \text{ cm}^3$ and a height of 10 cm.
Find the surface area of the cylinder in terms of π

- 24** If the distance between the two points $(x, 5)$, $(6, 1)$ is $2\sqrt{5}$ units of length , find the value of x

- 25** Determine the type of triangle ABC with respect to its side lengths if A $(-2, 4)$, B $(3, -1)$, C $(4, 5)$

- 26 In the given figure :**
Find : The slope of the line ℓ

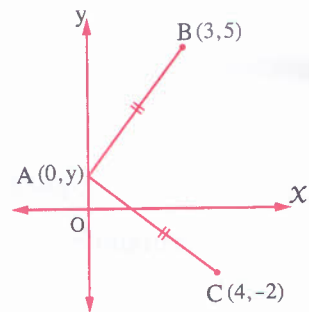


27 Prove that the points : A (- 1 , 1) , B (0 , 5) , C (5 , 6) , D (4 , 2) are the vertices of a parallelogram.

28 Prove that the point A (0 , - 3) lies on the straight line passing through the points B (1 , 2) , C (2 , 7)

29 In the given figure :

Find : The coordinates of point A



كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



حمل الآن

مجاناً وحصرياً

المراجعة رقم (2)

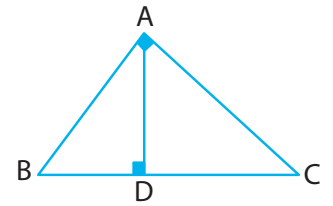
اختبار شهر ابريل



1- Choose the correct answer:

2

- a In the given figure, which of the following is true?



$$((AB)^2 = BD \times DC, (AB)^2 = BC \times AC, (AB)^2 = BD \times BC, (AB)^2 = BC \times DC)$$

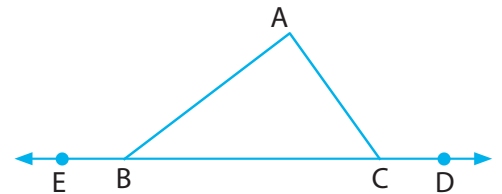
- b A circle whose radius length is 4 cm. What is its diameter length?

(2 cm , 4 cm , 8 cm , 16 cm)

2- Answer each of the following:

3

- a If $AB > AC$,
prove that: $m(\angle ACD) < m(\angle ABE)$



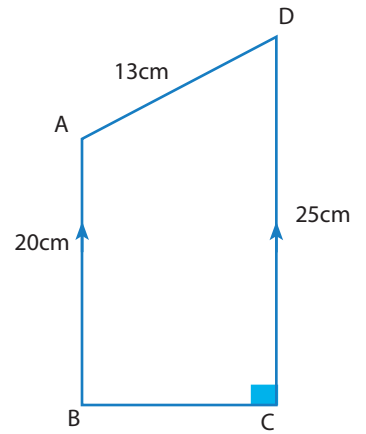
- b If the distance between two points $A(-1, 3)$, $B(k, 5)$ is $2\sqrt{5}$ unit length, find the possible values of k.

c In the opposite figure:

ABCD is a right-angled trapezoid.

(1) What is the length of the projection of $\overline{AD}$ on $\overleftrightarrow{DC}$.

(2) What is the length of the projection of $\overline{AD}$ on $\overleftrightarrow{BC}$.



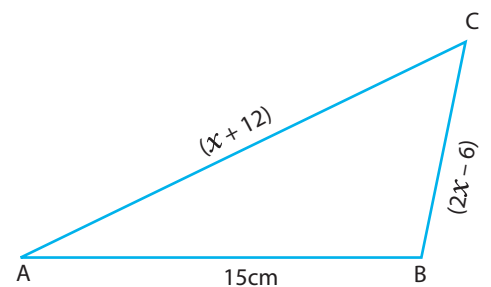
d A right circular cylinder whose height is 15 cm, and its base radius length is 5 cm. Find its surface area.

1- Choose the correct answer:

- a If the lengths of two sides of a triangle are 7 cm and 3 cm, then the interval to which the length of the third side belongs is
 ([4 ,10[,]4 ,10] , [4 ,10] ,]4 ,10[)
- b If A (0 , 4) , B(-3 , 0), the length of $\overline{AB}$ = unit length.
 (1 , 3 , 5 , 7)

3- Answer each of the following:

- a In the opposite figure:
 Find the values of x that satisfy:
 $m(\angle A) < m(\angle B)$



- b A right prism has a base in the shape of a right triangle, where the lengths of the two perpendicular sides are $\sqrt{3}$ cm and $\sqrt{12}$ cm, and the height of the prism is $\sqrt{20}$ cm. Find the volume of the prism.

- c The circumference of a circle is 18.84 cm. Find its radius length and its area. ($\pi = 3.14$)

- d Prove that the points A(3, 2), B(8, 7), and C(1, 4) are the vertices of a triangle, and determine its type based on its angle measures.

1- Choose the correct answer:

2

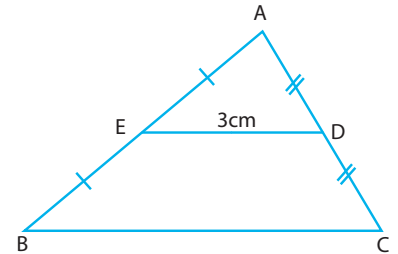
- a ABC is a triangle, if $m(\angle B) = 68^\circ$, $m(\angle C) = 84^\circ$, then which of the following statements is correct?

($AB = AC$, $AB < AC$, $BC < AB$, $BC > AC$)

- b In the opposite figure:

The length of projection of $\overline{ED}$ on $\overleftrightarrow{BC}$

is cm.



(2 , 3 , 6 , 0)

2- Complete each of the following:

8

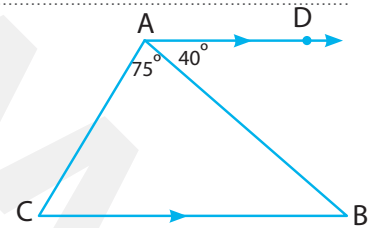
- a Arrange the measures of the angles of triangle ABC in ascending order, given that:

$AB = 12 \text{ cm}$, $BC = 15 \text{ cm}$, $AC = 8 \text{ cm}$.

- b In the opposite figure:

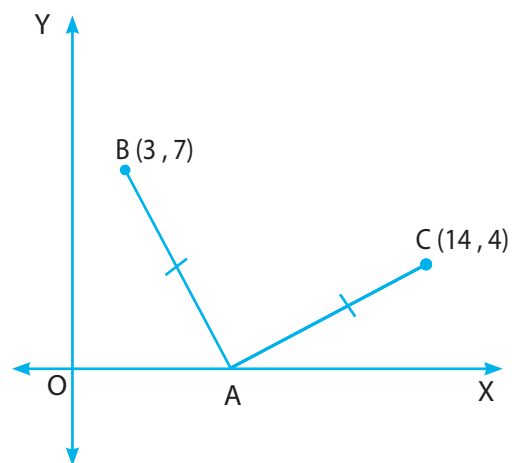
$\overrightarrow{AD} \parallel \overline{BC}$

Prove that: $AB > AC$



c In the opposite figure:

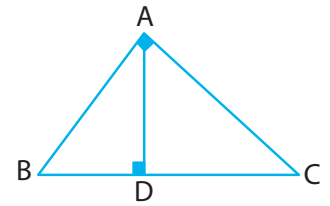
Find the coordinates of point A, where $AB = AC$



d A circle whose area $81\pi \text{ cm}^2$, find its radius length, then find its circumference to the nearest tenth.

1- Choose the correct answer:

- a In the given figure, which of the following is true?



$$((AB)^2 = BD \times DC, (AB)^2 = BC \times AC, (AB)^2 = BD \times BC, (AB)^2 = BC \times DC)$$

- b A circle whose radius length is 4 cm. What is its diameter length?

(2 cm , 4 cm , 8 cm , 16 cm)

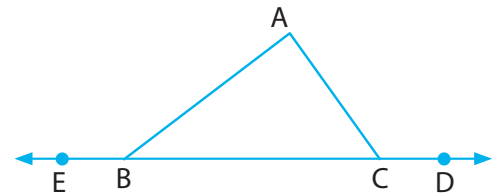
2- Answer each of the following:

- a If $AB > AC$,
prove that: $m(\angle ACD) < m(\angle ABE)$

$$\therefore AB > AC$$

$$\therefore m(\angle ACB) > m(\angle ABC)$$

$$\therefore m(\angle ABE) > m(\angle ACD)$$



- b If the distance between two points A $(-1, 3)$, B $(k, 5)$ is $2\sqrt{5}$ unit length, find the possible values of k.

$$\therefore d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\therefore \sqrt{(k+1)^2 + (5-3)^2} = 2\sqrt{5}$$

$$\therefore \sqrt{(k+1)^2 + 4} = 2\sqrt{5}$$

$$\therefore (k+1)^2 + 4 = 20$$

$$\therefore (k+1)^2 = 16$$

$$\therefore k+1 = \pm 4$$

$$\therefore k+1 = 4$$

$$\therefore k = 4 - 1$$

$$\therefore k = 3$$

or

$$k+1 = -4$$

$$k = -4 - 1$$

$$k = -5$$

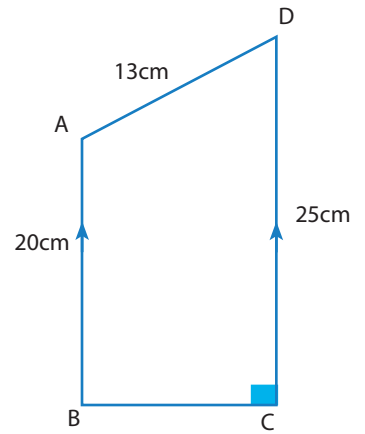
$\therefore$ The possible values of k are 3, -5

c In the opposite figure:

ABCD is a right-angled trapezoid.

(1) What is the length of the projection of $\overline{AD}$ on $\overleftrightarrow{DC}$.

(2) What is the length of the projection of $\overline{AD}$ on $\overleftrightarrow{BC}$.



Draw $\overline{AE}$, then $AB = EC = 20$ cm , $DE = 5$ cm

$\therefore$ ADE is a right-angled triangle in E

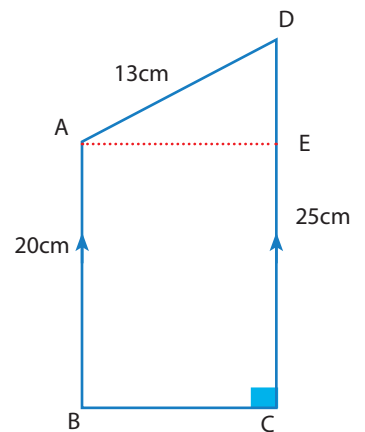
$$\therefore AE = \sqrt{(13)^2 - (5)^2} = 12 \text{ cm}$$

(1) the projection of $\overline{AD}$ on $\overleftrightarrow{DC}$ is $\overline{ED}$

$\therefore$ The length of $\overline{ED} = 5$ cm

(2) the projection of $\overline{AD}$ on $\overleftrightarrow{BC}$ is $\overline{BC}$

$\therefore$ The length of $\overline{BC} =$ the length of $\overline{AE} = 12$ cm



d A right circular cylinder whose height is 15 cm, and its base radius length is 5 cm. Find its surface area.

The surface area (total area) of cylinder (S.A) = lateral area + double the base area

$$= 2\pi rh + 2\pi r^2$$

$$= 2\pi r(h + r)$$

$$= 2\pi \times 5(15 + 5) = 200\pi \text{ cm}^2$$

1- Choose the correct answer:

- a If the lengths of two sides of a triangle are 7 cm and 3 cm, then the interval to which the length of the third side belongs is
 ([4 ,10[,]4 ,10] , [4 ,10] ,]4 ,10[)
- b If A (0 , 4) , B(-3 , 0), the length of $\overline{AB}$ = unit length.
 (1 , 3 , 5 , 7)

3- Answer each of the following:

- a In the opposite figure:

Find the values of x that satisfy:

$$m(\angle A) < m(\angle B)$$

$$\therefore AC + BC > AB \quad (\text{triangle inequality})$$

$$\therefore x + 12 + 2x - 6 > 15$$

$$\therefore 3x + 6 > 15$$

$$\therefore 3x > 9$$

$$\therefore x > 3$$

$$\therefore m(\angle A) < m(\angle B)$$

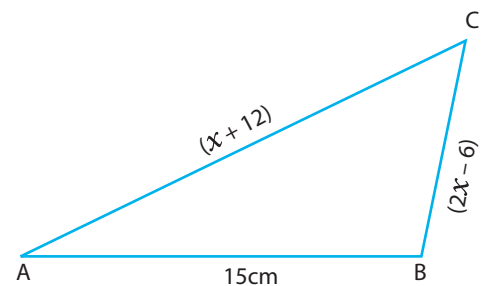
$$\therefore BC < AC$$

$$\therefore 2x - 6 < x + 12$$

$$\therefore 2x - x < 12 + 6$$

$$\therefore x < 18$$

$$\therefore 3 < x < 18 \quad \therefore x \in]3, 18[$$



- b A right prism has a base in the shape of a right triangle, where the lengths of the two perpendicular sides are $\sqrt{3}$ cm and $\sqrt{12}$ cm, and the height of the prism is $\sqrt{20}$ cm. Find the volume of the prism.

The volume of the prism = base area $\times$ height

$$= \left(\frac{1}{2} \times \sqrt{3} \times \sqrt{12} \right) \times \sqrt{20} = 6\sqrt{5} \text{ cm}^3$$

- c The circumference of a circle is 18.84 cm. Find its radius length and its area. ($\pi = 3.14$)

$\therefore$ The circumference of circle = $2 \pi r$

$$18.84 = 2 \times 3.14 \times r$$

$$18.84 = 6.28 \times r$$

$$r = 3 \text{ cm}$$

$\therefore$ The radius length of the circle = 3 cm

$\therefore$ The area of circle = πr^2

$$= 3.14 \times (3)^2$$

$$= 28.26 \text{ cm}^2$$

- d Prove that the points A(3, 2), B(8, 7), and C(1, 4) are the vertices of a triangle, and determine its type based on its angle measures.

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\therefore AB = \sqrt{(8 - 3)^2 + (7 - 2)^2} = 5\sqrt{2} \approx 7$$

$$\therefore BC = \sqrt{(1 - 8)^2 + (4 - 7)^2} = \sqrt{58} \approx 7.6$$

$$\therefore AC = \sqrt{(1 - 3)^2 + (4 - 2)^2} = 2\sqrt{2} \approx 2.8$$

$$\therefore AB + AC \approx 7 + 2.8 = 9.8$$

$$\therefore AB + AC > BC$$

$\therefore$ A, B, and C are the vertices of a triangle

$$\therefore (AB)^2 = 50, (BC)^2 = 58, (AC)^2 = 8$$

$$\therefore (AB)^2 + (AC)^2 = 50 + 8 = 58$$

$$\therefore (BC)^2 = (AB)^2 + (AC)^2$$

$\therefore$ The triangle ABC is a right angled-triangle in A.

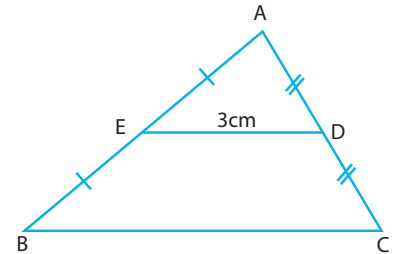
1- Choose the correct answer:

- a ABC is a triangle, if $m(\angle B) = 68^\circ$, $m(\angle C) = 84^\circ$, then which of the following statements is correct?

($AB = AC$, $AB < AC$, $BC < AB$, $BC > AC$)

- b In the opposite figure:

The length of projection of $\overline{ED}$ on $\overleftrightarrow{BC}$ is cm.



(2 , 3 , 6 , 0)

2- Complete each of the following:

- a Arrange the measures of the angles of triangle ABC in ascending order, given that:

$AB = 12$ cm , $BC = 15$ cm , $AC = 8$ cm.

$$AC < AB < BC$$

$$m(\angle B) < m(\angle C) < m(\angle A)$$

- b In the opposite figure:

$$\overrightarrow{AD} \parallel \overline{BC}$$

Prove that: $AB > AC$

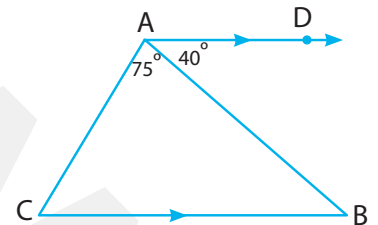
$$\therefore \overrightarrow{AD} \parallel \overline{BC}$$

$$\therefore m(\angle DAB) = m(\angle B) = 40^\circ \quad (\text{alternating angles})$$

$$\therefore m(\angle C) = 180^\circ - (75^\circ + 40^\circ) = 65^\circ$$

$$\therefore m(\angle C) > m(\angle B)$$

$$\therefore AB > AC$$



c In the opposite figure:

Find the coordinates of point A, where $AB = AC$

Point A lies on X-axis, then A (x , 0)

$$\therefore d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$AC = \sqrt{(x - 14)^2 + (0 - 4)^2} = \sqrt{(x - 14)^2 + 16}$$

$$AB = \sqrt{(x - 3)^2 + (0 - 7)^2} = \sqrt{(x - 3)^2 + 49}$$

$$\therefore AC = AB$$

$$\therefore \sqrt{(x - 14)^2 + 16} = \sqrt{(x - 3)^2 + 49}$$

$$\therefore (x - 14)^2 + 16 = (x - 3)^2 + 49$$

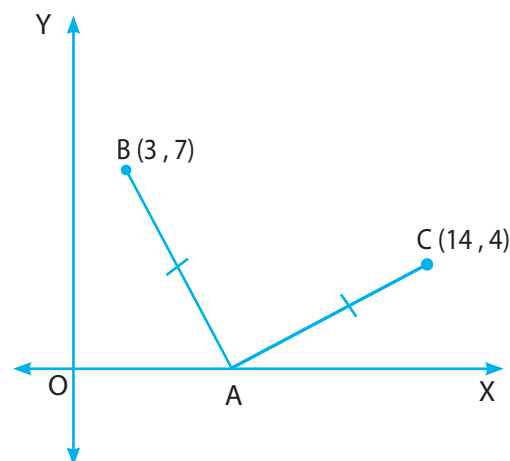
$$\therefore x^2 - 28x + 196 + 16 = x^2 - 6x + 9 + 49$$

$$\therefore -28x + 6x = 9 + 49 - 196 - 16$$

$$\therefore -22x = -154$$

$$\therefore x = \frac{-154}{-22} = 7$$

$$\therefore \text{The coordinates of A} = (7, 0)$$



d A circle whose area $81\pi \text{ cm}^2$, find its radius length, then find its circumference to the nearest tenth.

$$\therefore \text{The area of circle} = \pi r^2$$

$$\therefore 81\pi = \pi r^2$$

$$\therefore 81 = r^2$$

$$\therefore r = 9 \text{ cm}$$

$$\therefore \text{The circumference of circle} = 2\pi r$$

$$= 2 \times 3.14 \times 9$$

$$= 56.52 \text{ cm}$$

$$\therefore \text{The circumference of circle to nearest tenth} \approx 56.5 \text{ cm}$$

حمل الآن

مجاناً وحصرياً

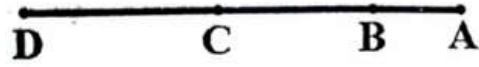
المراجعة رقم (3)

اختبار شهر ابريل



Home Performance Week 7

Answer the following :-



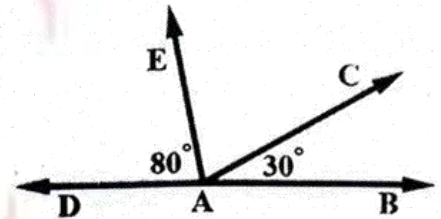
1) In the opposite figure

if the points A, B, C and D are collinear , $AB < DC$ prove that $DB > AC$

2) In the opposite figure

$A \in \overleftrightarrow{DB}$, $m(\angle CAB) = 30^\circ$, $m(\angle EAD) = 80^\circ$

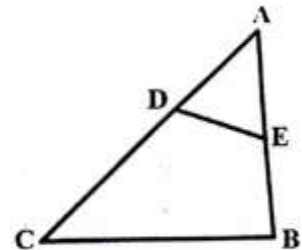
Prove that $m(\angle DAC) > m(\angle BAE)$



3) In the opposite figure

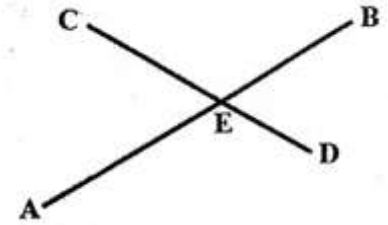
ABC is triangle in which $AC > AB$, $D \in \overline{AC}$, $E \in \overline{AB}$,
such that $m(\angle ADE) = m(\angle AED)$,

prove that $DC > EB$



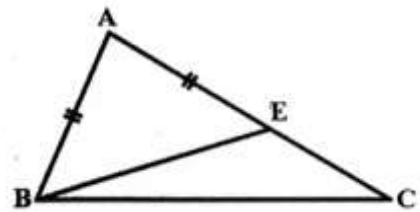
4) In the opposite figure

$EB > ED$, $EA > EC$, prove that $AB > CD$

**5) In the opposite figure**

$C \in \overline{AE}$, $AB = AE$

Prove $m(\angle ABE) > m(\angle C)$



Home Performance Week 8**Answer the following :-**

1) ABC is a triangle in which $m(\angle A) = 30^\circ$, $m(\angle B) = 70^\circ$, arrange the side lengths of the triangle in a descending order .

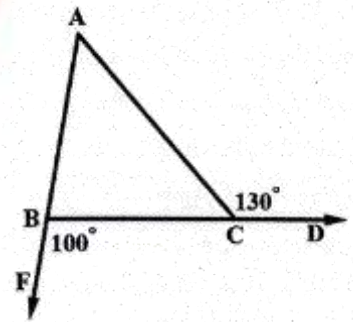
2) ABCD is a quadrilateral in which $AB=7\text{cm}$, $BC=4\text{cm}$, $CD=5\text{cm}$, $AD=8\text{cm}$.

Prove $m(\angle ABC) > m(\angle ADC)$

3) ABC is a triangle in which $D \in \overrightarrow{BC}$, $F \in \overrightarrow{AB}$,

$m(\angle ACD) = 130^\circ$, $m(\angle FBC) = 100^\circ$,

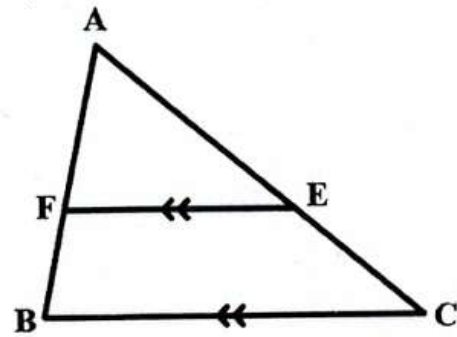
prove that $AC > AB$



4) In the opposite figure

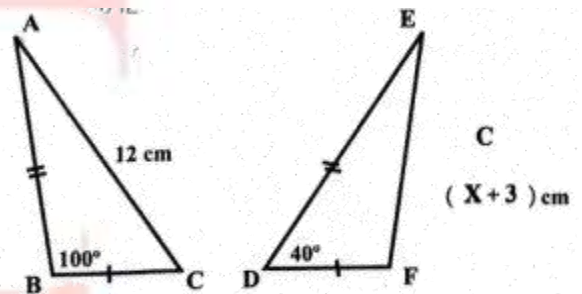
ABC is a triangle in which $AC > AB$

$\overline{FE} \parallel \overline{BC}$, Prove $m(\angle AFE) > m(\angle AEF)$



5) In the opposite figure

Find all possible values of x .



Home Performance Week 9

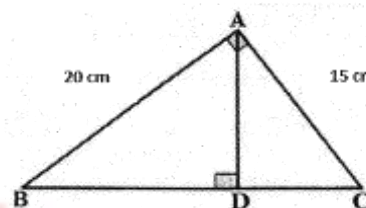
Answer the following :-

1) In the opposite figure find the length of

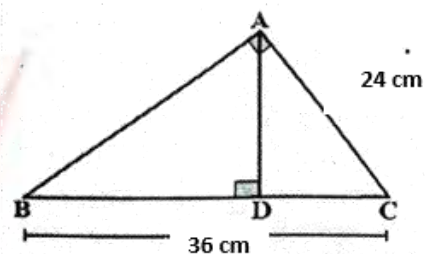
Projection of $\overline{AC}$ on $\overline{BC}$

Projection of $\overline{AB}$ on $\overline{BC}$

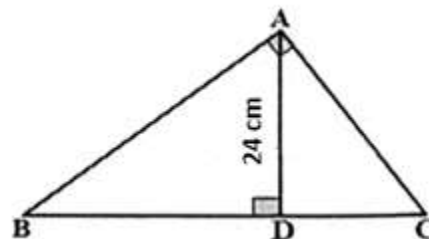
Projection of $\overline{AD}$ on $\overline{BC}$



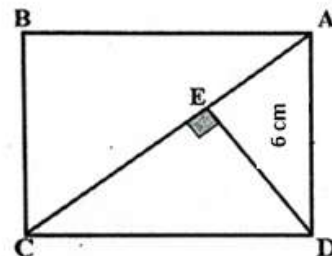
2) In the opposite figure find the length of AB , DC



3) In the opposite figure find the length of $DC \times DB$



4) ABCD is a rectangle its area is 48 cm^2 $DE \perp AC$, $AD = 6 \text{ cm}$. find CD , AC , ED

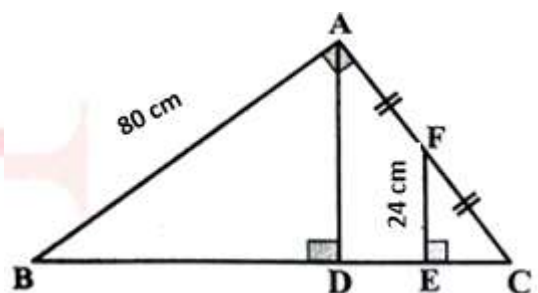


3) In the opposite figure

$AD, FE \perp BC$, $m(\angle BAC) = 90^\circ$

$FE = 24 \text{ cm}$, $AB = 80 \text{ cm}$, $FA = FC$

Find EC .



Assessment Week 9

Model A

First – choose the correct answer :-

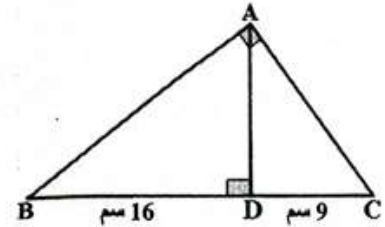
In the opposite figure:

1) $AD = \dots\dots\dots$ cm

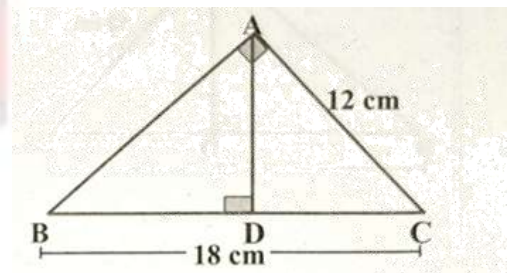
a) 12 b) 144 c) 24 d) 36

2) The length of the projection of $\overrightarrow{BC}$ on $\overrightarrow{AB} = \dots\dots\dots$ cm

a) 40 b) 20 c) 252 d) 400

Second – Answer the following :-

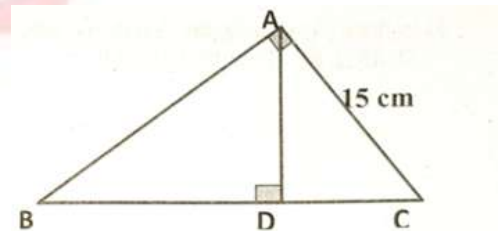
3) In the opposite figure: find DC



4) In the opposite figure:

ABC is a triangle, its area is 150 cm^2

Find: AB, AD



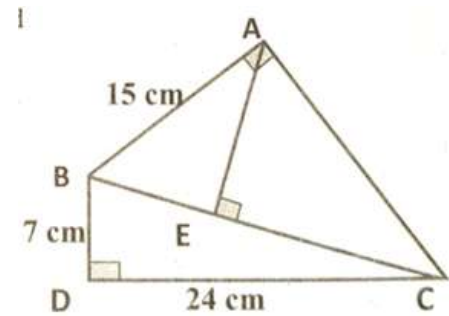
5) In the opposite figure:

ABC is a right-angled triangle at A,

BDC is a right-angled triangle at D,

$AE \perp BC$.

Find: BC, AC, AE



Model B

First – choose the correct answer :-

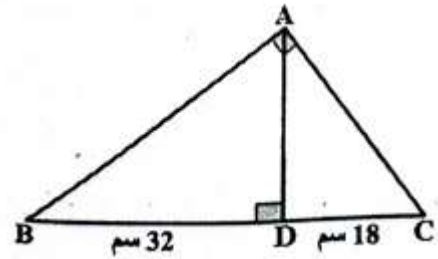
In the opposite figure:

1) $AD = \dots\dots\dots$ cm

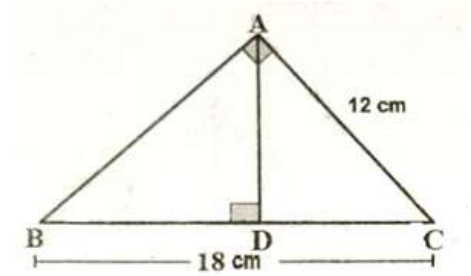
- a) 12 b) 144 c) 24 d) 36

2) The length of the projection of $\overline{BC}$ on $\overleftrightarrow{AB} = \dots\dots\dots$ cm

- a) 40 b) 20 c) 50 d) 60

Second – Answer the following :-

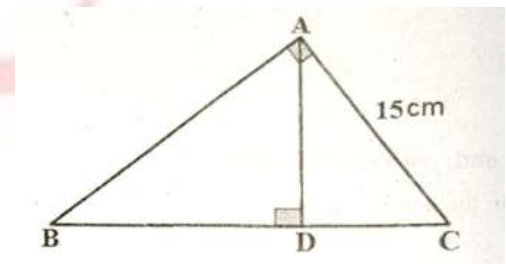
3) In the opposite figure: find DC



4) In the following figure:

ABC is a triangle with an area of 150 cm^2 .

Find: AB, AD.



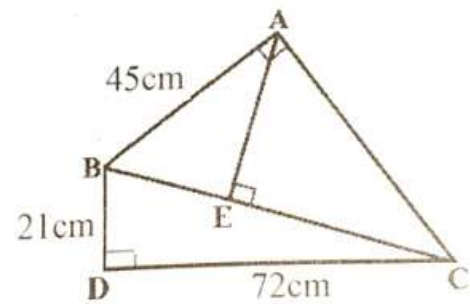
5) In the following figure:

ABC is a right-angled triangle at A,

BDC is a right-angled triangle at D,

$AE \perp BC$.

Find: BC, AC, AE.



Model C

First – choose the correct answer :-

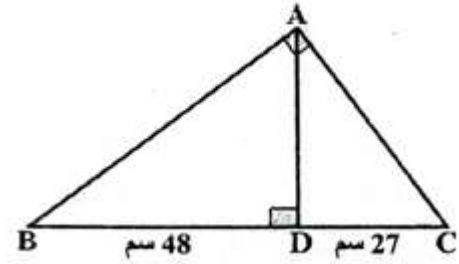
In the opposite figure:

1) $AD = \dots\dots\dots$ cm

- a) 12 b) 144 c) 24 d) 36

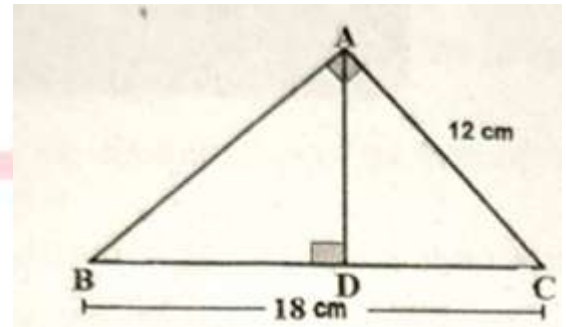
2) The length of the projection of $\overline{BC}$ on $\overleftrightarrow{AB} = \dots\dots\dots$ cm

- a) 40 b) 20 c) 50 d) 60



Second – Answer the following :-

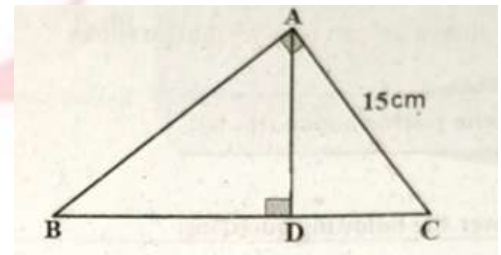
3) In the opposite figure: find DC



4) In the following figure:

ABC is a triangle with an area of 150 cm^2 .

Find: AB, AD.



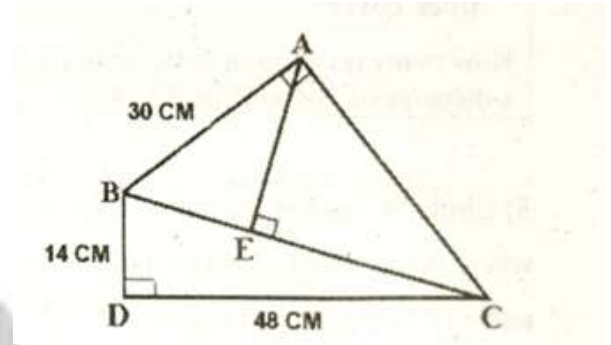
5) In the following figure:

ABC is a right-angled triangle at A,

BDC is a right-angled triangle at D,

$AE \perp BC$.

Find: BC, AC, AE.



Home Performance Week 10

Answer the following :-

1) Draw a circle N with a diameter of 6cm.

2) Find the circumference of the circle with a diameter of 8 feet ($\pi \approx 3.14$)

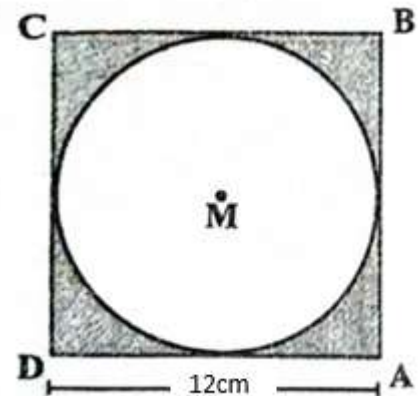
3) A truck tire has a diameter of 120cm , what is the circumference of the tire ? if the tire makes a complete revolution what distance does the truck cover ?

How many revolutions does the tire need to cover a distance of 200 Km?

($\pi \approx 3.14$)

4) Find the area of a circle with a radius of 12 cm ? ($\pi \approx 3.14$)

5) Circle M touches the sides of squares ABCD from the inside where AD = 12cm. Find the circumference and area of the shaded region ($\pi \approx 3.14$)



Answer the following :-

1) Right circular cylinder has a base diameter of 12 cm and a height of 8 cm. Find its volume, lateral area, and total area. ($\pi = 3.14$)

2) Right circular cylinder has a volume of 1540 cm^3 and a base radius of 7 cm. Find its height, lateral area. ($\pi = \frac{22}{7}$)

3) A right quadrilateral prism has a square base with a side length of 8 cm and a height of 10 cm. Find the volume of the prism, its total area.

4) A right triangular prism has a height of 10 cm and a volume of 120 cm^3 . Find the area of its base.

5) Which one has a larger volume? Right circular cylinder has a base diameter of 14 cm and a height of 10 cm, or a right quadrilateral prism has a square base with a side length of 10 cm and a height of 14 cm.

Assessment Week 10**Model A****First – choose the correct answer :-**

1) The circumference of a circle with a diameter of 20 cm =

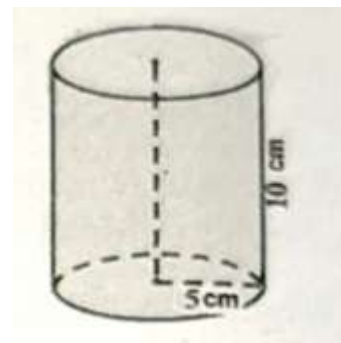
- (a) 20π cm (b) 10π cm (c) 20π cm² (d) 10π cm²

2) The volume of a right circular cylinder with a base radius of 5 cm and a height of 6 cm =

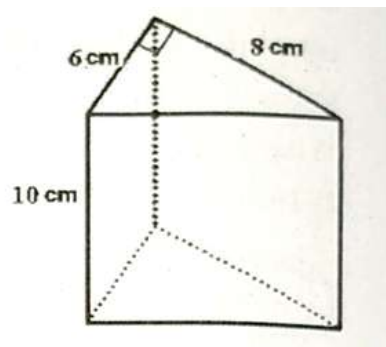
- (a) 150π cm³ (b) 128π cm³ (c) 175π cm³ (d) 40π cm³

Second – Answer the following :-

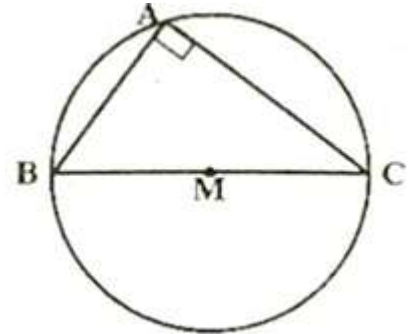
1) In the figure opposite: A right circular cylinder with a radius of 5 cm and a height of 10 cm. Find the volume of the cylinder.



2) In the figure opposite: A right triangular prism with a height of 10 cm and a base that is a right triangle, with the lengths of the legs being 6 cm, 8 cm. Find the lateral area of the prism.



3) In the figure opposite: $AB = 6$ cm, $AC = 8$ cm. Find the area and circumference of circle M in terms of π .



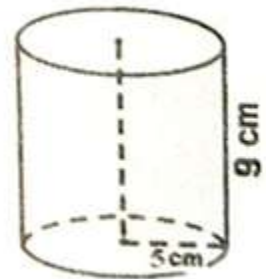
Model B

First – choose the correct answer :-

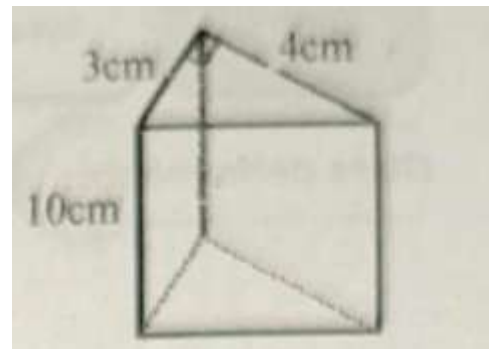
- 1) The circumference of a circle with a diameter of 10 cm =
- (a) 20π cm (b) 10π cm (c) 20π cm² (d) 10 cm²
- 2) The volume of a right circular cylinder with a base radius of 5 cm and a height of 7 cm =
- (a) 150π cm³ (b) 128π cm³ (c) 175π cm³ (d) 40π cm³

Second – Answer the following :-

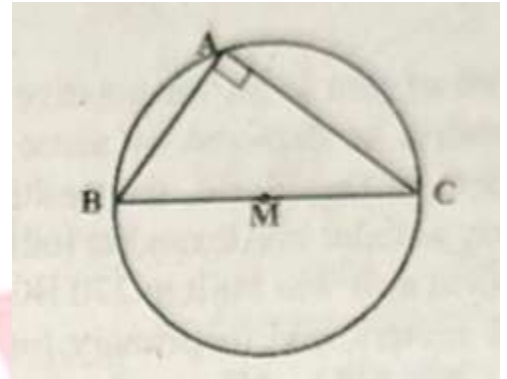
- 1) In the figure opposite: A right circular cylinder with a radius of 5 cm and a height of 9 cm. Find the volume of the cylinder.



- 2) In the figure opposite: A right triangular prism with a height of 10 cm and a base that is a right triangle, with the lengths of the legs being 3 cm, 4 cm. Find the lateral area of the prism.



3) In the figure opposite: $AB = 3$ cm, $AC = 4$ cm. Find the area and circumference of circle M in terms of π .



Model C

First – choose the correct answer :-

1) The circumference of a circle with a diameter of 12 cm =

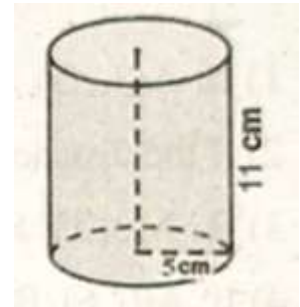
- (a) 12π cm (b) 6π cm (c) 12π cm² (d) 6 cm²

2) The volume of a right circular cylinder with a base radius of 8 cm and a height of 2 cm =

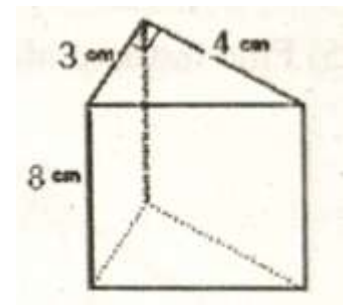
- (a) 150π cm³ (b) 128π cm³ (c) 175π cm³ (d) 40π cm³

Second – Answer the following :-

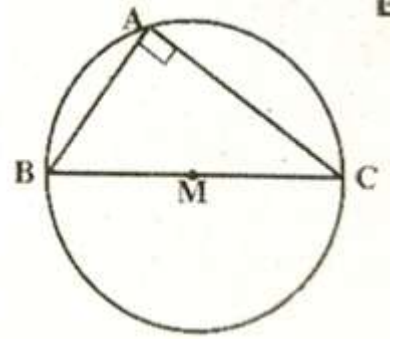
1) In the figure opposite: A right circular cylinder with a radius of 5 cm and a height of 11 cm. Find the volume of the cylinder.



2) In the figure opposite: A right triangular prism with a height of 8 cm and a base that is a right triangle, with the lengths of the legs being 3 cm, 4 cm. Find the lateral area of the prism.



3) In the figure opposite: $AB = 12$ cm, $AC = 16$ cm. Find the area and circumference of circle M in terms of π .



Home Performance Week 11

Answer the following :-

1) If $A(3, -5)$, $B(7, -2)$ find AB .

2) If the distance between the two points $B(3, 2)$, $A(K, 8)$ is equal to 10 units of length find the value of K .

3) If $A(3, 1)$, $B(-5, 1)$, $C(-1, 4)$ prove that the points A, B, C are not collinear.

4) If $A(0, 6)$, $B(6, 0)$, $C(2, -4)$, $D(-4, 2)$ prove that the points A, B, C, D are the vertices of a rectangle.

5) Find the area of the circle whose center is the point $M(-3, 2)$ and passes through the point $A(3, -6)$

Assessment Week 11

Model A

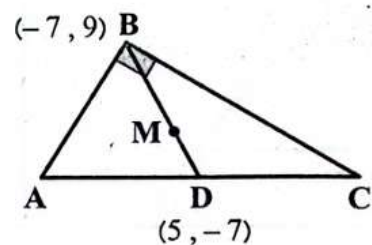
First – choose the correct answer :-

- 1) If $A(-4, 1)$ and $B(4, 7)$, then the length of AB equals units.
 (a) 20 (b) 13 (c) 25 (d) 10
- 2) The distance of the point $A(-7, 24)$ from the origin equals units.
 (a) 12 (b) 25 (c) 15 (d) 20

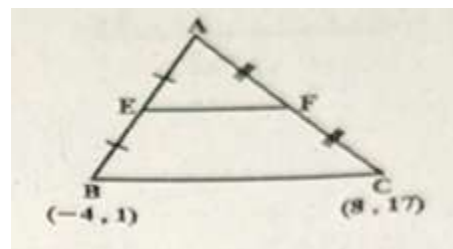
Second – Answer the following :-

- 1) Find the circumference of the circle whose center is $M(11, 18)$ and which passes through the point $A(3, -6)$.

- 2) In the opposite figure, M is the intersection point of the medians of triangle ABC . Find AC .



- 3) In the opposite figure, find EF .



Model B

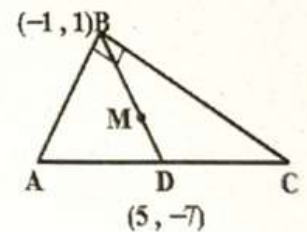
First – choose the correct answer :-

- 1) If $A(-4, 1)$ and $B(1, 13)$, then the length of AB equals units.
 (a) 20 (b) 13 (c) 25 (d) 10
- 2) The distance of the point $A(-6, 8)$ from the origin equals units.
 (a) 12 (b) 25 (c) 15 (d) 10

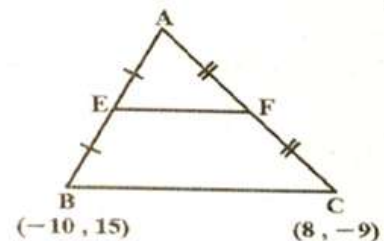
Second – Answer the following :-

- 1) Find the circumference of the circle whose center is $M(15, 10)$ and passes through the point $A(3, -6)$.

- 2) In the opposite figure, M is the intersection point of the medians of triangle ABC . Find AC .



- 3) In the opposite figure, find EF .



Model C

First – choose the correct answer :-

1) If $A(-11, 1)$ and $B(1, 17)$, then the length of AB equals units.

- (a) 20 (b) 13 (c) 25 (d) 10

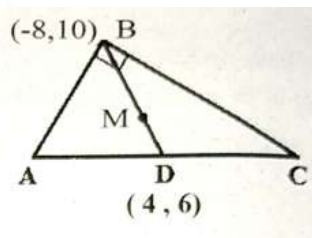
2) The distance of the point $A(-9, 12)$ from the origin equals units.

- (a) 12 (b) 13 (c) 15 (d) 20

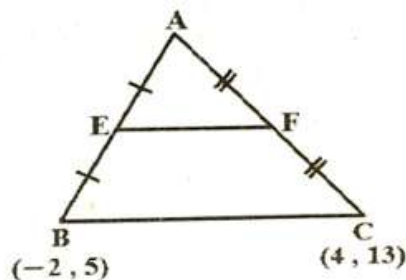
Second – Answer the following :-

1) Find the circumference of the circle whose center is $M(14, 12)$ and which passes through the point $A(2, -4)$.

2) In the opposite figure, M is the intersection point of the medians of triangle ABC . Find AC .



3) In the opposite figure, find EF .



Home Performance Week 12**Answer the following :-**

1) In each of the following, find the slope of the straight line AB:

a) $A(-3, -5), B(7, -2)$

b) $A(9, 2), B(4, 3)$

c) $A(3, 11), B(3, -2)$

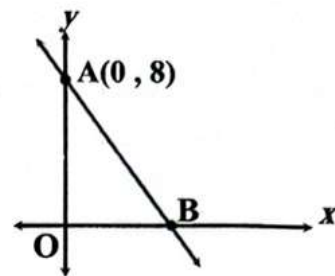
d) $A(3, -2), B(7, -2)$

2) If the slope of the straight line passing through the two points $(k, 9), (7, 2)$ is 7, find the value of k .

3) If the straight line passes through the two points $(5, 1), (3, k)$ and is parallel to x -axis, find the value of k .

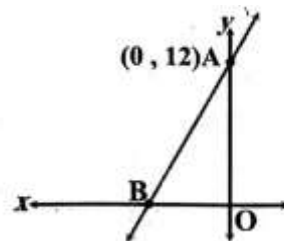
4) In the opposite figure:

If the area of triangle OAB is 20 square units, find the slope of the straight line AB.



5) In the opposite figure:

If the area of triangle OBA is 18 square units, find the slope of the straight line AB.



Answer the following :-

- 1) A company has 300 employees. The management wants to know their opinions regarding organizing recreational trips. Each employee was assigned a number from 001 to 300. A 10% random sample was selected and they were then asked targeted questions.
- 2) A hotel management wants to survey the opinions of 500 guests regarding the quality of service. Each guest was assigned a number from 201 to 700. A 10% random sample was selected and they were then asked about the service level.
- 3) A university college has 4,000 students in the first year, 3,000 in the second year, 2,000 in the third year, and 1,000 in the fourth year. If we want to draw a stratified sample of 500 students representing each stream according to its size, calculate the number of individuals from each stream in the sample.
- 4) A hospital has 30 doctors and 70 nurses. A stratified sample of 10 individuals was taken to represent each group according to its size. Calculate the number of nurses in the sample.

5) A school has 200 boys and 300 girls. The school wants to conduct an opinion poll to take a sample of 50 boys and girls, representing each model according to its size. Calculate the number of boys in the sample.



Home Performance Week 7

Answer the following :-



1) In the opposite figure

if the points A, B, C and D are collinear , $AB < DC$ prove that $DB > AC$

$$\therefore AB < DC$$

By adding BC to both

$$\therefore AB + BC < DC + BC$$

$$\therefore AC < DB$$

2) In the opposite figure

$$A \in \overleftrightarrow{DB} , m(\angle CAB) = 30^\circ , m(\angle EAD) = 80^\circ$$

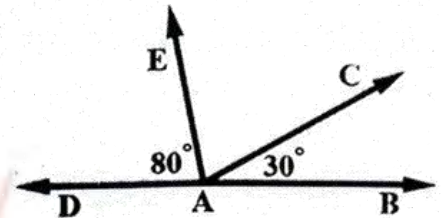
Prove that $m(\angle DAC) > m(\angle BAE)$

$$\therefore A \in \overleftrightarrow{DB} , m(\angle CAB) < m(\angle EAD)$$

By adding $(\angle EAC)$ to both

$$\therefore m(\angle CAB) + (\angle EAC) < m(\angle EAD) + (\angle EAC)$$

$$\therefore m(\angle DAC) > m(\angle BAE)$$



3) In the opposite figure

ABC is triangle in which $AC > AB$, $D \in \overline{AC}$, $E \in \overline{AB}$, such that $m(\angle ADE) = m(\angle AED)$, prove that $DC > EB$

$$\therefore AC > AB \quad 1$$

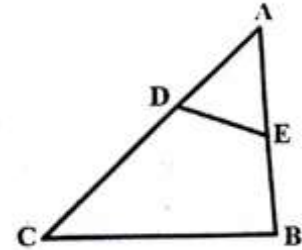
$$\therefore m(\angle ADE) = m(\angle AED)$$

$$\therefore AD = AE \quad 2$$

By subtracting 2 from 1

$$\therefore AC - AD > AB - AE$$

$$\therefore DC > EB$$

4) In the opposite figure

$EB > ED$, $EA > EC$, prove that $AB > CD$

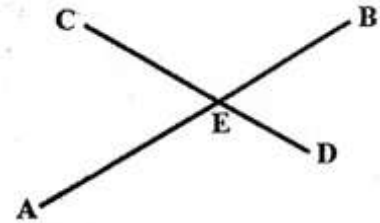
$$\therefore EB > ED \quad 1$$

$$EA > EC \quad 2$$

By adding 1 and 2

$$\therefore EB + EA > ED + EC$$

$$\therefore AB > CD$$

5) In the opposite figure

$C \in \overline{AE}$, $AB = AE$ Prove $m(\angle ABE) > m(\angle C)$

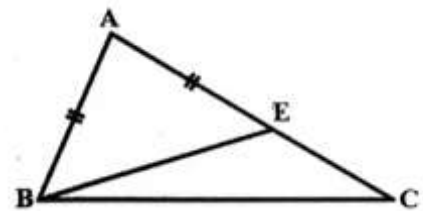
$$\therefore AB = AE$$

$$\therefore m(\angle ABE) = m(\angle AEB)$$

$$\therefore AE + EC > AB$$

$$\therefore AC > AB$$

$$\therefore m(\angle ABE) > m(\angle C)$$



Home Performance Week 8

Answer the following :-

1) ABC is a triangle in which $m(\angle A) = 30^\circ$, $m(\angle B) = 70^\circ$, arrange the side lengths of the triangle in a descending order .

AB , AC , CB

2) ABCD is a quadrilateral in which AB=7cm , BC=4cm , CD=5cm , AD=8cm.

Prove $m(\angle ABC) > m(\angle ADC)$

In triangle ABD:

$\therefore AD > AB$

$m(\angle ABD) > m(\angle ADB)$ (1)

In triangle CBD:

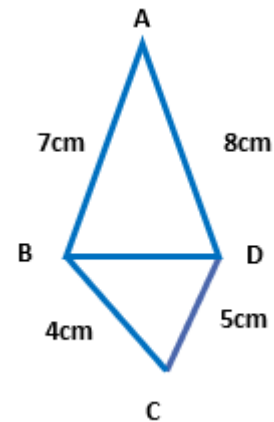
$\therefore CD > BC$

$m(\angle DBC) > m(\angle CDB)$ (2)

By adding (1) and (2):

$m(\angle ABD) + m(\angle DBC) > m(\angle ADB) + m(\angle CDB)$

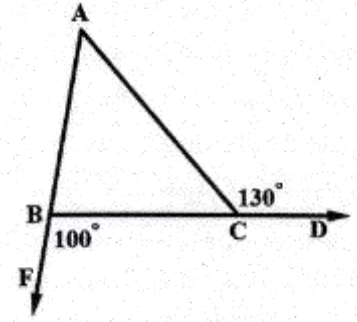
$\therefore m(\angle ABC) > m(\angle ADC)$



3) ABC is a triangle in which $D \in \overrightarrow{BC}$, $F \in \overrightarrow{AB}$,

$$m(\angle ACD) = 130^\circ , \quad m(\angle FBC) = 100^\circ ,$$

prove that $AC > AB$



$$\therefore m(\angle ACD) + m(\angle ACB) = 180 \quad (\text{straight angle})$$

$$\therefore m(\angle ACB) = 180 - 130 = 50$$

$$\therefore m(\angle FBC) + m(\angle ABC) = 180 \quad (\text{straight angle})$$

$$\therefore m(\angle ABC) = 180 - 100 = 80$$

$$\therefore m(\angle ABC) > m(\angle ACB) \quad (80 > 50)$$

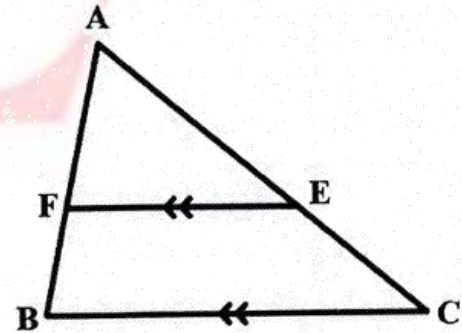
$\therefore$ the side opposite the larger angle is longer:

$$\therefore AC > AB$$

4) In the opposite figure

ABC is a triangle in which $AC > AB$

$\overline{FE} \parallel \overline{BC}$, Prove $m(\angle AFE) > m(\angle AEF)$



$$\therefore AC > AB$$

$$\therefore m(\angle ABC) > m(\angle ACB)$$

$$\therefore FE \parallel BC$$

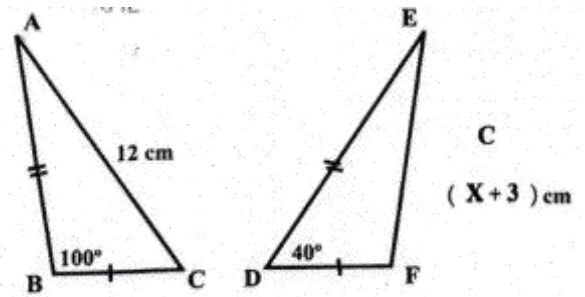
$$\therefore m(\angle ABC) = m(\angle AFE) \quad (\text{corresponding angles})$$

$$\therefore m(\angle ACB) = m(\angle AEF) \quad (\text{corresponding angles})$$

$$\therefore m(\angle AFE) > m(\angle AEF)$$

5) In the opposite figure

Find all possible values of x .



$$\therefore AB = DE, \quad BC = DF$$

$$m(\angle B) > m(\angle D)$$

$$\therefore AC > EF$$

$$AC = 12 \text{ cm}$$

$$EF = (x + 3) \text{ cm}$$

$$x + 3 < 12$$

$$x < 9$$

$$x + 3 > 0$$

$$x > -3$$

$$-3 < x < 9$$

Home Performance Week 9

Answer the following :-1) In the opposite figure find the length ofProjection of $\overline{AC}$ on $\overline{BC}$

$$BC = \sqrt{225 + 400} = 25$$

$$AD = \frac{15 \times 20}{25} = 12$$

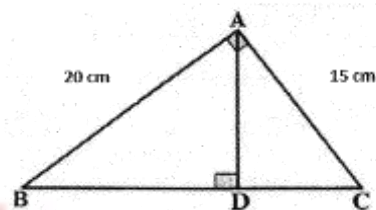
$$DC = \sqrt{225 - 144} = 9$$

Projection of $\overline{AB}$ on $\overline{BC}$

$$BD = \sqrt{400 + 144} = 16$$

Projection of $\overline{AD}$ on $\overline{BC}$

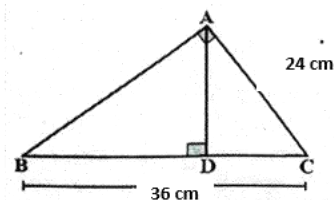
point D = 0

2) In the opposite figure find the length of AB , DC

$$AB = 12\sqrt{5}$$

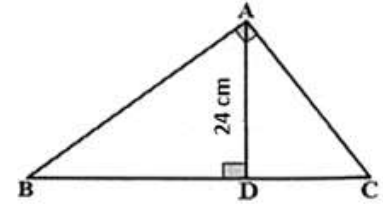
$$AD = 8\sqrt{5}$$

$$DC = 16$$



3) In the opposite figure find the length of $DC \times DB$

= 576 cm

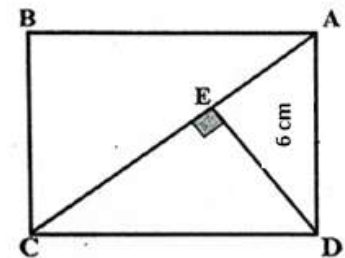


4) ABCD is a rectangle its area is 48 cm^2 $DE \perp AC$, $AD = 6 \text{ cm}$. find CD , AC , ED

$CD = 8 \text{ cm}$

$AC = 10 \text{ cm}$

$ED = 4.8 \text{ cm}$



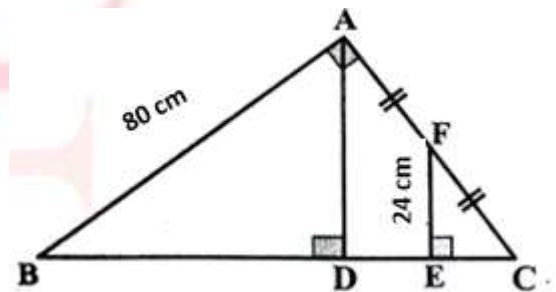
5) In the opposite figure

$AD, FE \perp BC$, $m(\angle BAC) = 90^\circ$

$FE = 24 \text{ cm}$, $AB = 80 \text{ cm}$, $FA = FC$

Find EC .

= 18 cm



Assessment Week 9

Model A

First – choose the correct answer :-

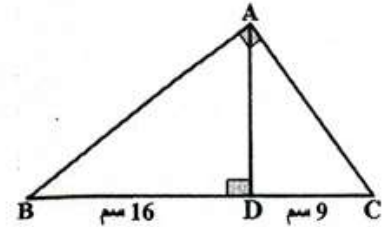
In the opposite figure:

1) $AD = \dots\dots\dots$ cm

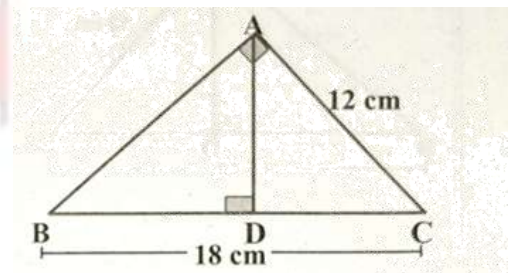
- a) 12 b) 144 c) 24 d) 36

2) The length of the projection of $\overrightarrow{BC}$ on $\overrightarrow{AB} = \dots\dots\dots$ cm

- a) 40 b) 20 c) 252 d) 400

Second – Answer the following :-

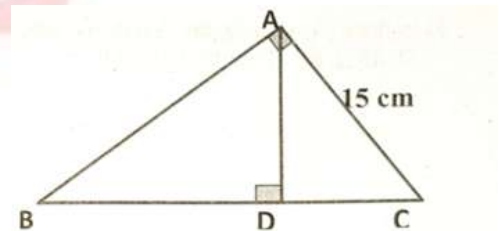
3) In the opposite figure: find DC

= 8 cm

4) In the opposite figure:

ABC is a triangle, its area is 150 cm^2

Find: AB, AD

AB = 20 cm**AD = 12 cm**

5) In the opposite figure:

ABC is a right-angled triangle at A,

BDC is a right-angled triangle at D,

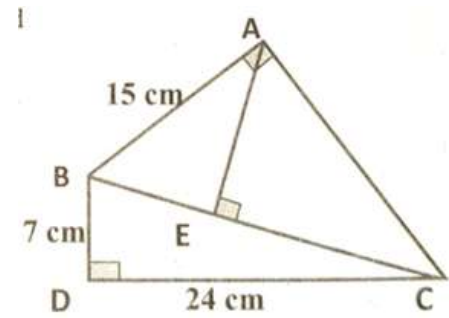
$AE \perp BC$.

Find: BC, AC, AE

$$BC = 25\text{cm}$$

$$AC = 20\text{cm}$$

$$AE = 12\text{cm}$$



Model B

First – choose the correct answer :-

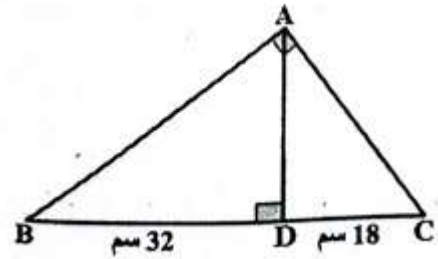
In the opposite figure:

1) $AD = \dots\dots\dots$ cm

- a) 12 b) 144 c) **24** d) 36

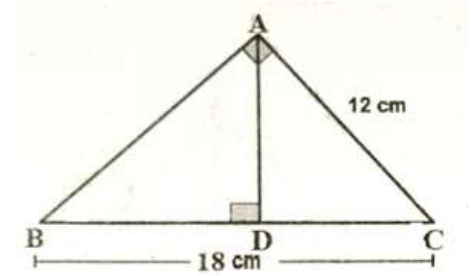
2) The length of the projection of $\overline{BC}$ on $\overleftrightarrow{AB} = \dots\dots\dots$ cm

- a) **40** b) 20 c) 50 d) 60

Second – Answer the following :-

3) In the opposite figure: find DC

DC = 8cm



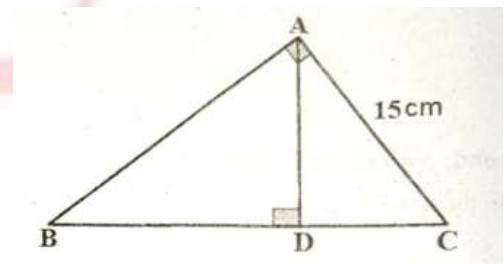
4) In the following figure:

ABC is a triangle with an area of 150 cm^2 .

Find: AB, AD.

AB = 20cm

AD = 12cm



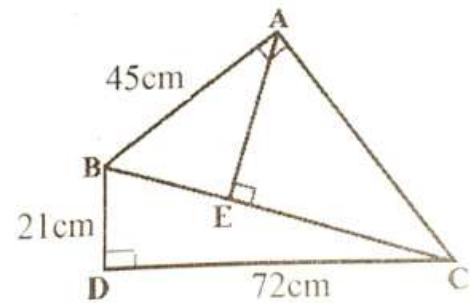
5) In the following figure:

ABC is a right-angled triangle at A,

BDC is a right-angled triangle at D,

$AE \perp BC$.

Find: BC, AC, AE.



$$BC = 75\text{cm}$$

$$AC = 60\text{cm}$$

$$AE = 36\text{cm}$$

Model C

First – choose the correct answer :-

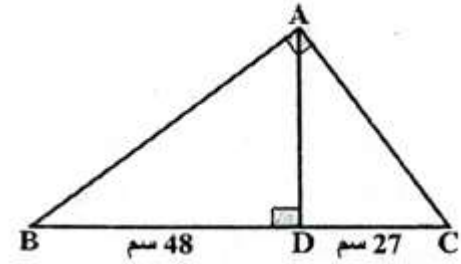
In the opposite figure:

1) $AD = \dots\dots\dots$ cm

- a) 12 b) 144 c) 24 d) **36**

2) The length of the projection of $\overline{BC}$ on $\overleftrightarrow{AB} = \dots\dots\dots$ cm

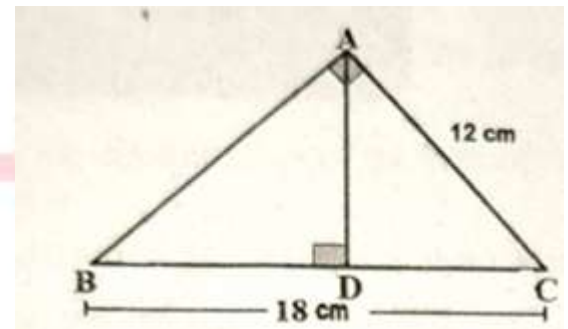
- a) 40 b) 20 c) 50 d) **60**



Second – Answer the following :-

3) In the opposite figure: find DC

= 8cm



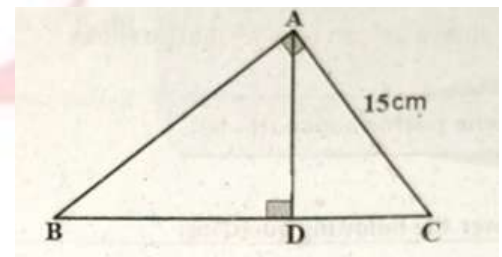
4) In the following figure:

ABC is a triangle with an area of 150 cm^2 .

Find: AB, AD.

AB = 20cm

AD = 12cm



5) In the following figure:

ABC is a right-angled triangle at A,

BDC is a right-angled triangle at D,

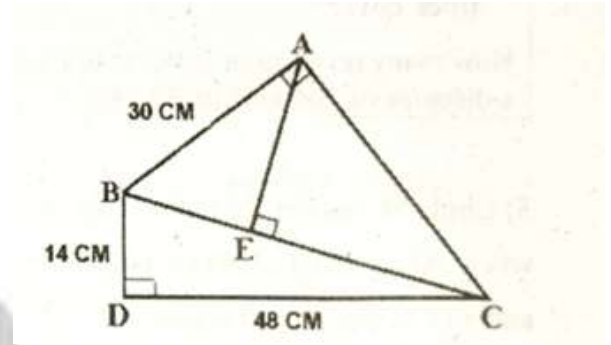
$AE \perp BC$.

Find: BC, AC, AE.

$$BC = 50\text{cm}$$

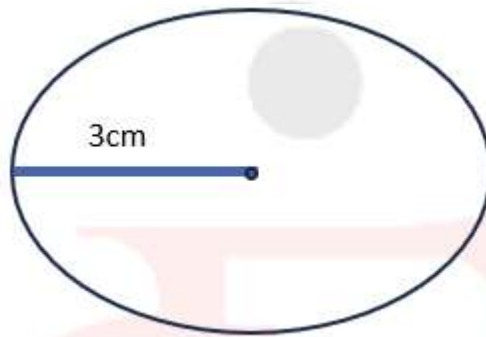
$$AC = 40\text{cm}$$

$$AE = 24\text{cm}$$



Home Performance Week 10**Answer the following :-**

1) Draw a circle N with a diameter of 6cm.



2) Find the circumference of the circle with a diameter of 8 feet ($\pi \approx 3.14$)

25.12 cm

3) A truck tire has a diameter of 120cm , what is the circumference of the tire ? if the tire makes a complete revolution what distance does the truck cover ?

How many revolutions does the tire need to cover a distance of 200 Km?

($\pi \approx 3.14$)

Circumference = 376.8 cm

Number of revolutions = $\frac{20,000,000\text{cm}}{376.8\text{cm}} = 53078.6$ revolutions

4) Find the area of a circle with a radius of 12 cm ? ($\pi \approx 3.14$)

452.16 cm²

5) Circle M touches the sides of squares ABCD from the inside where AD = 12cm. Find the circumference and area of the shaded region ($\pi \approx 3.14$)

Perimeter of square = 48 cm

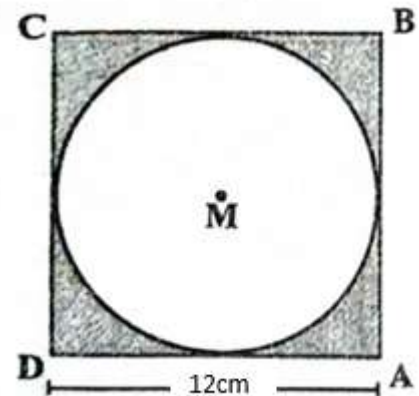
Circumference of the circle = 37.68 cm

Circumference of shaded = 85.68 cm

Area of square = 144 cm²

Area of the circle = 113.04 cm²

Area of shaded = 30.96 cm²



Answer the following :-

1) Right circular cylinder has a base diameter of 12 cm and a height of 8 cm. Find its volume, lateral area, and total area. ($\pi = 3.14$)

$$V = 904.32 \text{ cm}^3 \quad L.A = 301.44 \text{ cm}^2 \quad T.A = 527.52 \text{ cm}^2$$

2) Right circular cylinder has a volume of 1540 cm^3 and a base radius of 7 cm. Find its height, lateral area. ($\pi = \frac{22}{7}$)

$$H = 10 \text{ cm} \quad L.A = 440 \text{ cm}^2$$

3) A right quadrilateral prism has a square base with a side length of 8 cm and a height of 10 cm. Find the volume of the prism, its total area.

$$V = 640 \text{ cm}^3 \quad T.A = 448 \text{ cm}^2$$

4) A right triangular prism has a height of 10 cm and a volume of 120 cm^3 . Find the area of its base.

$$A = 12 \text{ cm}^2$$

5) Which one has a larger volume? Right circular cylinder has a base diameter of 14 cm and a height of 10 cm, or a right quadrilateral prism has a square base with a side length of 10 cm and a height of 14 cm.

$$V \text{ of cylinder} = 1538 \text{ cm}^3 \quad V \text{ of prism} = 1400 \text{ cm}^3$$

Prism < cylinder



Assessment Week 10

Model A

First – choose the correct answer :-

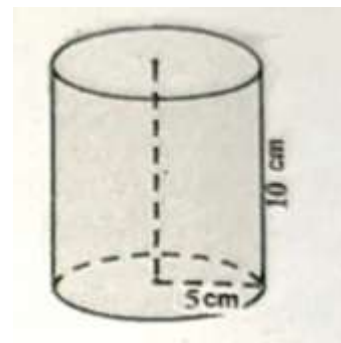
1) The circumference of a circle with a diameter of 20 cm =

(a) 20π cm(b) 10π cm(c) 20π cm²(d) 10π cm²

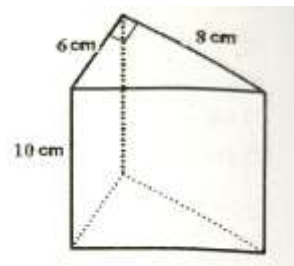
2) The volume of a right circular cylinder with a base radius of 5 cm and a height of 6 cm =

(a) 150π cm³(b) 128π cm³(c) 175π cm³(d) 40π cm³Second – Answer the following :-

1) In the figure opposite: A right circular cylinder with a radius of 5 cm and a height of 10 cm. Find the volume of the cylinder.

 $V = 250\pi$ cm³

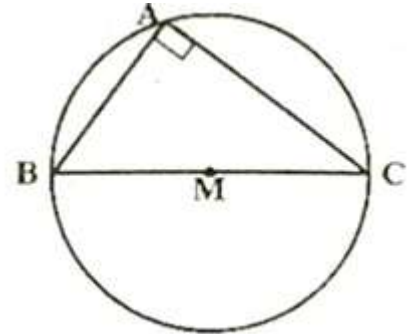
2) In the figure opposite: A right triangular prism with a height of 10 cm and a base that is a right triangle, with the lengths of the legs being 6 cm, 8 cm. Find the lateral area of the prism.

 $L.A = 240$ cm²

3) In the figure opposite: $AB = 6$ cm, $AC = 8$ cm. Find the area and circumference of circle M in terms of π .

$$\text{circumference} = 10\pi \text{ cm}$$

$$\text{area} = 25\pi \text{ cm}^2$$



Model B

First – choose the correct answer :-

1) The circumference of a circle with a diameter of 10 cm =

- (a) 20π cm (b) 10π cm (c) 20π cm² (d) 10 cm²

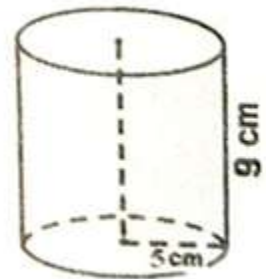
2) The volume of a right circular cylinder with a base radius of 5 cm and a height of 7 cm =

- (a) 150π cm³ (b) 128π cm³ (c) 175π cm³ (d) 40π cm³

Second – Answer the following :-

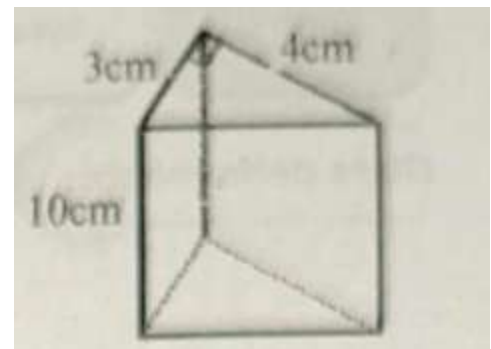
1) In the figure opposite: A right circular cylinder with a radius of 5 cm and a height of 9 cm. Find the volume of the cylinder.

$$V = 225\pi \text{ cm}^3$$



2) In the figure opposite: A right triangular prism with a height of 10 cm and a base that is a right triangle, with the lengths of the legs being 3 cm, 4 cm. Find the lateral area of the prism.

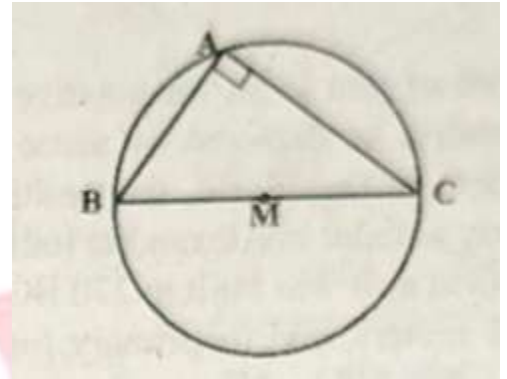
$$= 120 \text{ cm}^2$$



3) In the figure opposite: $AB = 3$ cm, $AC = 4$ cm. Find the area and circumference of circle M in terms of π .

$$\text{circumference} = 5\pi \text{ cm}$$

$$\text{area} = 6.25\pi \text{ cm}^2$$



Model C

First – choose the correct answer :-

1) The circumference of a circle with a diameter of 12 cm =

- (a) 12π cm (b) 6π cm (c) 12π cm² (d) 6 cm²

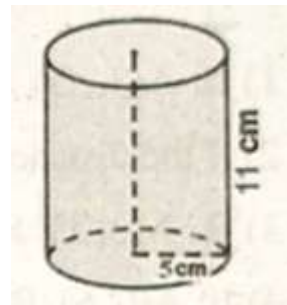
2) The volume of a right circular cylinder with a base radius of 8 cm and a height of 2 cm =

- (a) 150π cm³ (b) 128π cm³ (c) 175π cm³ (d) 40π cm³

Second – Answer the following :-

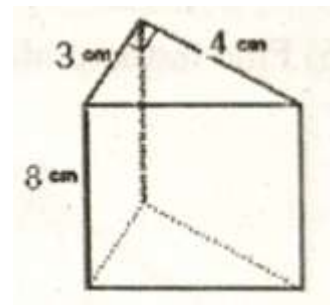
1) In the figure opposite: A right circular cylinder with a radius of 5 cm and a height of 11 cm. Find the volume of the cylinder.

$$V = 275\pi \text{ cm}^3$$



2) In the figure opposite: A right triangular prism with a height of 8 cm and a base that is a right triangle, with the lengths of the legs being 3 cm, 4 cm. Find the lateral area of the prism.

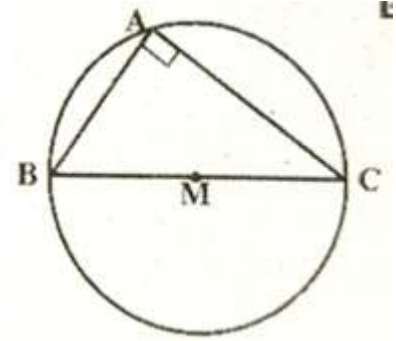
$$L.A = 96\pi \text{ cm}^2$$



3) In the figure opposite: $AB = 12$ cm, $AC = 16$ cm. Find the area and circumference of circle M in terms of π .

$$\text{circumference} = 20\pi \text{ cm}$$

$$\text{area} = 100\pi \text{ cm}^2$$



Home Performance Week 11

Answer the following :-

1) If $A(3, -5)$, $B(7, -2)$ find AB.

= 5 units

2) If the distance between the two points $B(3, 2)$, $A(K, 8)$ is equal to 10 units of length find the value of K.

$K = 11$ or -5

3) If $A(3, 1)$, $B(-5, 1)$, $C(-1, 4)$ prove that the points A,B,C are not collinear.

$AB = 8$ units

$BC = 5$ units

$AC = 5$ units

$AB \neq BC + AC$

points A,B,C are not collinear.

4) If $A(0, 6)$, $B(6, 0)$, $C(2, -4)$, $D(-4, 2)$ prove that the points A,B,C,D are the vertices of a rectangle.

$AB = 6\sqrt{2}$ units

$BC = 4\sqrt{2}$ units

$CD = 6\sqrt{2}$ units

$DA = 4\sqrt{2}$ units

$AB=CD$, $BC=DA$

$AC = \sqrt{104}$ units

$BD = \sqrt{104}$ units

$AC=BD$

points A,B,C,D are the vertices of a rectangle.



5) Find the area of the circle whose center is the point $M(-3, 2)$ and passes through the point $A(3, -6)$

$$\text{Area} = 100 \pi \text{ cm}^2$$

Assessment Week 11

Model A

First – choose the correct answer :-

- 1) If A(-4, 1) and B(4, 7), then the length of AB equals units.
 (a) 20 (b) 13 (c) 25 (d) **10**
- 2) The distance of the point A(-7, 24) from the origin equals units.
 (a) 12 (b) **25** (c) 15 (d) 20

Second – Answer the following :-

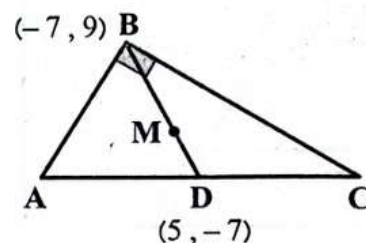
- 1) Find the circumference of the circle whose center is M(11, 18) and which passes through the point A(3, -6).

$$\text{Radius} = 8\sqrt{10} \text{ cm}$$

$$\text{Circumference} = 2 \times \pi \times 8\sqrt{10} = 16\sqrt{10} \text{ units}$$

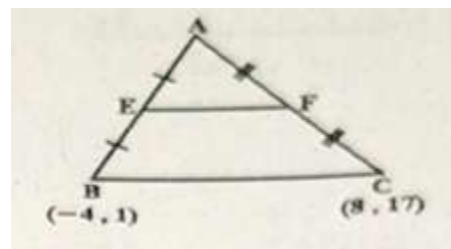
- 2) In the opposite figure, M is the intersection point of the medians of triangle ABC. Find AC.

$$\text{AC} = 40 \text{ units}$$



- 3) In the opposite figure, find EF.

$$\text{EF} = 10 \text{ units}$$



Model B

First – choose the correct answer :-

- 1) If A(-4, 1) and B(1, 13), then the length of AB equals units.
 (a) 20 (b) **13** (c) 25 (d) 10
- 2) The distance of the point A(-6, 8) from the origin equals units.
 (a) 12 (b) 25 (c) 15 (d) **10**

Second – Answer the following :-

- 1) Find the circumference of the circle whose center is M(15, 10) and passes through the point A(3, -6).

Radius = 20 units

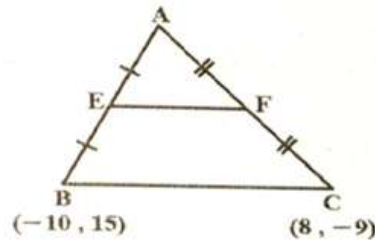
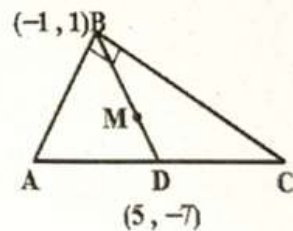
Circumference = $2 \times \pi \times 20 = 40$ units

- 2) In the opposite figure, M is the intersection point of the medians of triangle ABC. Find AC.

AC = 20 units

- 3) In the opposite figure, find EF.

EF = 15 units



Model C

First – choose the correct answer :-

1) If $A(-11, 1)$ and $B(1, 17)$, then the length of AB equals units.

- (a) 20 (b) 13 (c) 25 (d) 10

2) The distance of the point $A(-9, 12)$ from the origin equals units.

- (a) 12 (b) 13 (c) 15 (d) 20

Second – Answer the following :-

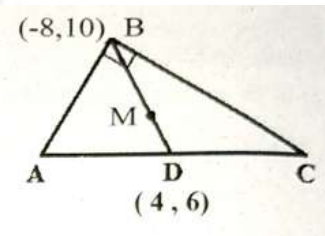
1) Find the circumference of the circle whose center is $M(14, 12)$ and which passes through the point $A(2, -4)$.

Radius = 20 cm

Circumference = $2 \times \pi \times 20 = 40 \text{ cm}$

2) In the opposite figure, M is the intersection point of the medians of triangle ABC . Find AC .

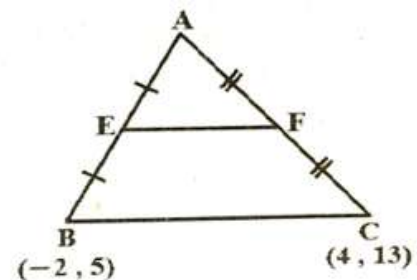
$AC = 40$ units



of

3) In the opposite figure, find EF .

$EF = 5$ units



Home Performance Week 12

Answer the following :-

1) In each of the following, find the slope of the straight line AB:

a) $A(-3, -5), B(7, -2) = \frac{3}{10}$

b) $A(9, 2), B(4, 3) = \frac{1}{5}$

c) $A(3, 11), B(3, -2) = \frac{-13}{0}$ undefined

d) $A(3, -2), B(7, -2) = 0$

2) If the slope of the straight line passing through the two points $(k, 9), (7, 2)$ is 7, find the value of k .

$k = 4$

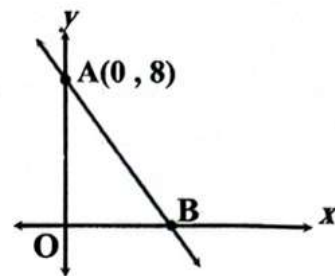
3) If the straight line passes through the two points $(5, 1), (3, k)$ and is parallel to x -axis, find the value of k .

$k = 1$

4) In the opposite figure:

If the area of triangle OAB is 20 square units, find the slope of the straight line AB.

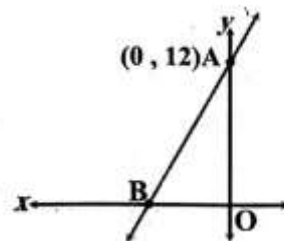
$m = -\frac{8}{5}$



5) In the opposite figure:

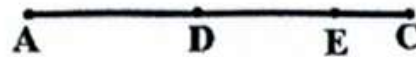
If the area of triangle OBA is 18 square units, find the slope of the straight line AB.

$m = 4$



End of 2nd monthQ1 Choose the correct answer:

1. In the opposite figure, A, D, E and C lie on the same straight line and $EC < AD$. Then $AE \dots DC$



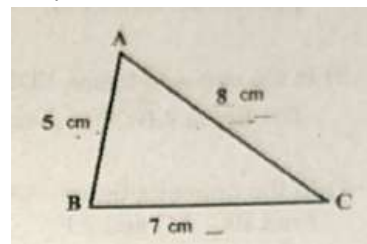
- a) $>$ b) $<$ c) $=$ d) $\geq$

2. The area of a circle whose radius is 3 cm equals cm^2 .

- a) 3π b) 6π c) 9π d) 12π

3. In triangle ABC, if $AB = 5 \text{ cm}$, $BC = 7 \text{ cm}$ and $CA = 8 \text{ cm}$, then

- a) $m(\angle A) = m(\angle B)$ b) $m(\angle A) > m(\angle B)$
c) $m(\angle A) < m(\angle B)$ d) $m(\angle C) > m(\angle B)$



4. In triangle ABC, $m(\angle A) = 50^\circ$, $m(\angle B) = 80^\circ$. Then

- a) $AB < BC$ b) $AB > BC$
c) $AC > AB$ d) $AC = BC$

5. The circumference of a circle whose diameter is 20 cm = cm

- a) 40π b) 20π c) 10π d) 5π

6. In the rhombus ABCD, the diagonals intersect at E. If $AC > BD$, then BE AE

- a) $>$ b) $<$ c) $=$ d) $\geq$

7. Two circles have areas 49π and 64π square units. What is the ratio of their circumferences?

- a) 7:8 b) 4:7 c) 1:2 d) 16:9



8. A right pentagonal prism has a regular pentagon base whose area is 10 m^2 , and the area of one lateral rectangle is 9 m^2 , then the total surface area of the prism

- a) 19 m^2 b) 38 m^2 c) 55 m^2 d) 65 m^2

9. A right circular cylinder has radius of base 5 cm and height 10 cm. Find its total surface area.

- a) $150\pi \text{ cm}^2$ b) $200\pi \text{ cm}^2$ c) $300\pi \text{ cm}^2$ d) $600\pi \text{ cm}^2$

10. What is the distance from point (3, 4) to the origin?

- a) 3 units of length b) 4 units of length
c) 5 units of length d) 7 units of length

11. The lateral surface area of a right triangular prism whose base sides are 3 cm, 4 cm, 5 cm and whose height is 8 cm =

- a) 120 cm^2 b) 108 cm^2 c) 50 cm^2 d) 96 cm^2

12. If A(-4, 1) and B(4, 7), then the length of AB = units.

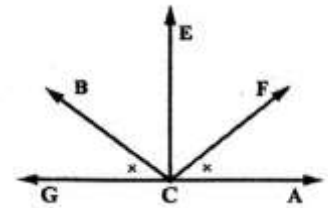
- a) 10 b) 13 c) 20 d) 25

Q2 Answer the following:

1. Find the area of the circle whose center is $M(-3, 2)$ and which passes through the point $A(3, -6)$.

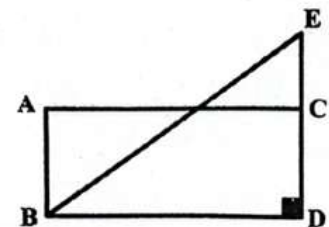
2. In the opposite figure, $C \in GA$, $m(\angle GCB) = m(\angle ACF)$, $C \in GA$ and $m(\angle ECG) > m(\angle ECA)$.

Prove that $m(\angle ECB) > m(\angle ECF)$.



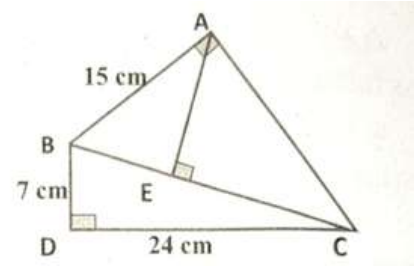
3. In the opposite figure, EDB is a right triangle at D , $C \in ED$.

The figure $ABCD$ is a rectangle. Prove that $EB > AC$.



4. In the opposite figure, $\triangle ABC$ is right-angled at A, and $\triangle BDC$ is right-angled at D, $AE \perp BC$.

Find BC, AC and AE.



5. Prove that the points A(1, 2), B(2, 4) and C(-3, -6) are collinear.

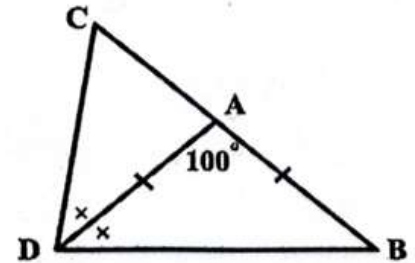
6. Prove that the points A(1, 4), B(-3, 2) and C(-1, -2) form the vertices of a right triangle.

7. In triangle ABC, $AB = 13$ cm, $BC = 15$ cm and $CA = 11$ cm.

Arrange the measures of the angles of the triangle in descending order.

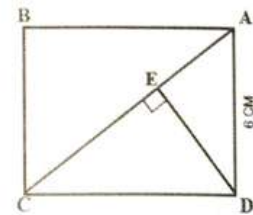
8. In the opposite figure, $A \in CB$, DA bisects $\angle CDB$, $m(\angle BAD) = 100^\circ$, and $AB = AD$.

Prove that $CD > AB$.



9. In the opposite figure, $ABCD$ is a rectangle whose area is 48 cm^2 , and $AD = 6 \text{ cm}$. $DE \perp AC$.

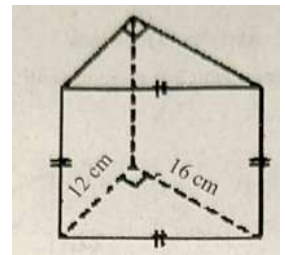
Find CD , AC and ED .



10) A right circular cylinder has a base radius of 12 cm and a height of 22 cm. If the base radius increases by 25% while the height remains constant, calculate the volume of the cylinder after the increase.

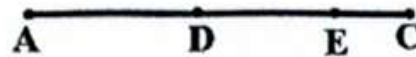
11) A right circular cylinder has volume $320\pi \text{ cm}^3$ and height 20 cm. Find the diameter of its base.

12) In the opposite figure, find the volume of the right triangular prism.



Q1 Choose the correct answer:

1. In the opposite figure, A, D, E and C lie on the same straight line and $EC < AD$. Then $AE \dots DC$



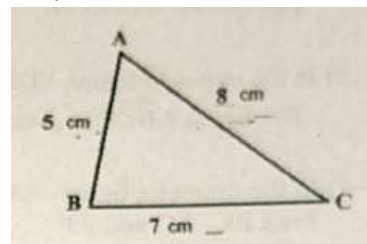
- a) $>$ b) $<$ c) $=$ d) $\geq$

2. The area of a circle whose radius is 3 cm equals cm^2 .

- a) 3π b) 6π c) 9π d) 12π

3. In triangle ABC, if $AB = 5 \text{ cm}$, $BC = 7 \text{ cm}$ and $CA = 8 \text{ cm}$, then

- a) $m(\angle A) = m(\angle B)$ b) $m(\angle A) > m(\angle B)$
 c) $m(\angle A) < m(\angle B)$ d) $m(\angle C) > m(\angle B)$



4. In triangle ABC, $m(\angle A) = 50^\circ$, $m(\angle B) = 80^\circ$. Then

- a) $AB < BC$ b) $AB > BC$
 c) $AC > AB$ d) $AC = BC$

5. The circumference of a circle whose diameter is 20 cm = cm

- a) 40π b) 20π c) 10π d) 5π

6. In the rhombus ABCD, the diagonals intersect at E. If $AC > BD$, then BE AE

- a) $>$ b) $<$ c) $=$ d) $\geq$

7. Two circles have areas 49π and 64π square units. What is the ratio of their circumferences?

- a) $7:8$ b) $4:7$ c) $1:2$ d) $16:9$



8. A right pentagonal prism has a regular pentagon base whose area is 10 m^2 , and the area of one lateral rectangle is 9 m^2 , then the total surface area of the prism

- a) 19 m^2 b) 38 m^2 c) 55 m^2 d) 65 m^2

9. A right circular cylinder has radius of base 5 cm and height 10 cm. Find its total surface area.

- a) $150\pi \text{ cm}^2$ b) $200\pi \text{ cm}^2$ c) $300\pi \text{ cm}^2$ d) $600\pi \text{ cm}^2$

10. What is the distance from point (3, 4) to the origin?

- a) 3 units of length b) 4 units of length
c) 5 units of length d) 7 units of length

11. The lateral surface area of a right triangular prism whose base sides are 3 cm, 4 cm, 5 cm and whose height is 8 cm =

- a) 120 cm^2 b) 108 cm^2 c) 50 cm^2 d) 96 cm^2

12. If A(-4, 1) and B(4, 7), then the length of AB = units.

- a) 10 b) 13 c) 20 d) 25

Q2 Answer the following:

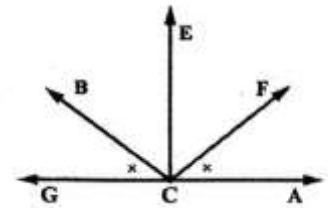
1. Find the area of the circle whose center is $M(-3, 2)$ and which passes through the point $A(3, -6)$.

$100 \pi \text{ cm}^2$

2. In the opposite figure, $C \in GA$, $m(\angle GCB) = m(\angle ACF)$, $C \in GA$ and $m(\angle ECG) > m(\angle ECA)$.

Prove that $m(\angle ECB) > m(\angle ECF)$.

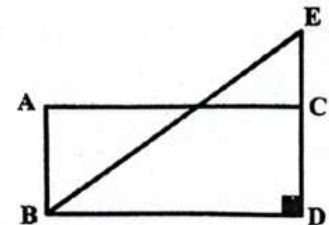
Prove by yourself or watch the video on you tube



3. In the opposite figure, EDB is a right triangle at D , $C \in ED$.

The figure $ABCD$ is a rectangle. Prove that $EB > AC$.

Prove by yourself or watch the video on you tube



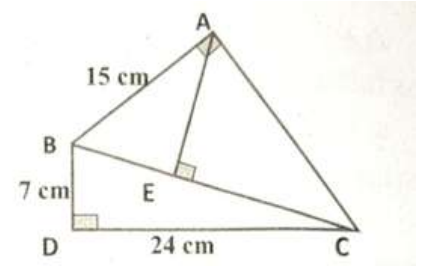
4. In the opposite figure, $\triangle ABC$ is right-angled at A, and $\triangle BDC$ is right-angled at D, $AE \perp BC$.

Find BC, AC and AE.

$$BC = 25\text{cm}$$

$$AC = 20\text{cm}$$

$$AE = 12\text{cm}$$



5. Prove that the points A(1, 2), B(2, 4) and C(-3, -6) are collinear.

Prove by yourself or watch the video on you tube

6. Prove that the points A(1, 4), B(-3, 2) and C(-1, -2) form the vertices of a right triangle.

Prove by yourself or watch the video on you tube

7. In triangle ABC, $AB = 13\text{ cm}$, $BC = 15\text{ cm}$ and $CA = 11\text{ cm}$.

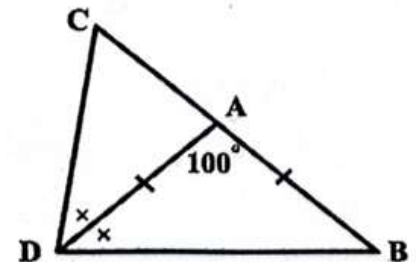
Arrange the measures of the angles of the triangle in descending order.

$$(\angle A), (\angle C), (\angle B)$$

8. In the opposite figure, $A \in CB$, DA bisects $\angle CDB$, $m(\angle BAD) = 100^\circ$, and $AB = AD$.

Prove that $CD > AB$.

Prove by yourself or watch the video on you tube



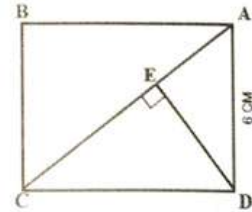
9. In the opposite figure, ABCD is a rectangle whose area is 48 cm^2 , and $AD = 6 \text{ cm}$. $DE \perp AC$.

Find CD, AC and ED.

$$CD = 8 \text{ cm}$$

$$AC = 10 \text{ cm}$$

$$ED = 4.8 \text{ cm}$$



10) A right circular cylinder has a base radius of 12 cm and a height of 22 cm. If the base radius increases by 25% while the height remains constant, calculate the volume of the cylinder after the increase.

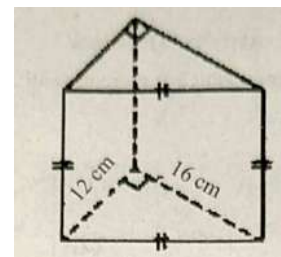
$$= 4950\pi \text{ cm}^3$$

11) A right circular cylinder has volume $320\pi \text{ cm}^3$ and height 20 cm. Find the diameter of its base.

$$= 8 \text{ cm}$$

12) In the opposite figure, find the volume of the right triangular prism.

$$= 1920 \text{ cm}^3$$



حمل الآن

مجاناً وحصرياً

المراجعة رقم (4)

اختبار شهر ابريل



Unit 3

Q1 Choose the correct answer :-

1) The sum of the lengths of any two sides in a triangle the length of the third side.

- a) is less than b) is greater than c) is equal to d) half

2) The length of any side in a triangle the sum of the lengths of the other two sides.

- a) $>$ b) $<$ c) $=$ d) is double

3) If the lengths of two sides in a triangle are 7 cm and 4 cm then the length of the third could be

- a) 1 cm b) 2 cm c) 3 cm d) 4 cm

4) In $\triangle ABC$, if $AB = 3$ cm, $BC = 5$ cm, and $AC = x$ cm, then : $x \in$

- a) $]3, 5[$ b) $]2, 5[$ c) $]5, 8[$ d) $]2, 8[$

5) In $\triangle ABC$, $AB + BC - AC$

- a) $> \text{zero}$ b) $< \text{zero}$
c) $= \text{zero}$ d) = the perimeter of $\triangle ABC$

6) In the given figure:

Which of the following statements is true?



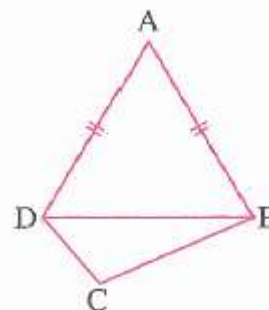
- a) $AB < CD$ b) $AC < BD$ c) $AC > BD$ d) $AC = BD$

7) In the given figure:

$m(\angle DBC) < m(\angle BDC)$, $AB = AD$

then: $m(\angle ABC)$ $m(\angle ADC)$

- a) $<$ b) $>$
c) $=$ d) $\geq$



8) If $AB = 7$ cm, $BC = 5$ cm, $AC = 6$ cm, then the smallest angle in measure is

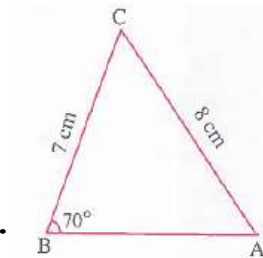
- a) $\angle A$ b) $\angle B$ c) $\angle C$ d) $\angle ABC$

9) In $\triangle EFG$: If $FG > EF$, then $m(\angle E) > \dots\dots\dots$

- a) 90° b) $m(\angle GEF)$ c) $m(\angle F)$ d) $m(\angle G)$

10) In the given figure: $m(\angle A)$ could be equal

- a) 70° b) 80°
c) 60° d) 75°

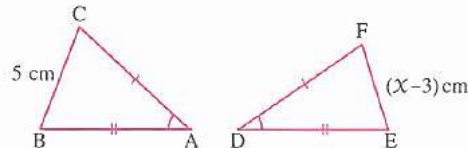


11) If ABC is a triangle in which: $m(\angle B) = 90^\circ$ then:

- a) $BC < AC$ b) $AC < AB$ c) $AC < BC$ d) $AC = AB$

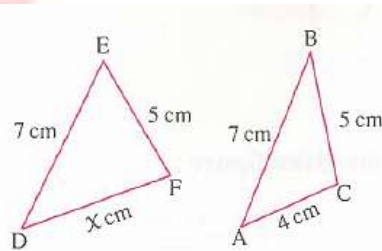
12) In the given figure: If $m(\angle A) > m(\angle D)$, What is the possible value of from the following values?

- a) 2 b) 3
c) 7 d) 9



13) In the given figure:
If $m(\angle E) > m(\angle B)$, what is the inequality that expresses the possible values of x ?

- a) $2 < x < 12$ b) $4 < x < 12$
c) $4 < x < 16$ d) $x > 12$



14) The projection of a point on given a straight line is

- a) a point. b) a line segment.
c) a ray. d) straight line.

15) The projection of a line segment on a straight line that is not perpendicular to it is

- a) a ray. b) a point.
c) a line segment. d) a straight line.

16) The length of the projection of a line segment on a given straight line is the length of the line segment itself.

- a) $\leq$ b) $>$ c) $\geq$ d) $=$

17) The length of the projection of a line segment on a given perpendicular straight line

- a) is greater than the length of the original segment.
b) equals the length of the original segment.
c) is greater than or equal to the length of the original segment.
d) equals zero.

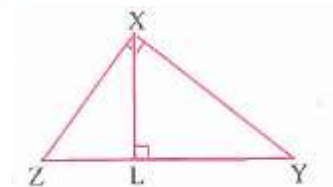
18) If $\overline{XY} \parallel \overline{AB}$, then the length of the projection of $\overline{AB}$ on $\overline{XY}$ the length of $\overline{AB}$

- a) $>$ b) $<$ c) $=$ d) $\geq$

19) In the given figure:

$$LZ \times YL = \dots\dots\dots$$

- a) $(XL)^2$ b) $(XY)^2$
c) $(XZ)^2$ d) $(YZ)^2$



20) The circumference of the circle =

- a) $2\pi r$ b) πr c) $4\pi r$ d) $2\pi d$

21) What is the circumference of a circle with a radius length of 20 cm ?

- a) 10π cm b) 20π cm c) 40π cm d) 80π cm

22) What is the area of the circle whose radius length is 10 m ?

- a) 5π m² b) 10π m² c) 25π m² d) 100π m²



23) What is the area of a circle whose diameter length is 1.4 cm? ($\pi \approx \frac{22}{7}$)

- a) 1.4 cm^2 b) 1.08 cm^2 c) 1.54 cm^2 d) 6.16 cm^2

24) In any circle, what is the value of $\frac{C}{d}$?

- a) $\frac{\pi}{2}$ b) $\frac{2}{\pi}$ c) π d) 2π

25) The radius length of a circle is 1 foot, then its area = square feet.

- a) $\frac{1}{2}\pi$ b) π c) 2π d) π^2

26) $\pi = \dots\dots\dots$

- a) $\frac{C}{r}$ b) $\frac{C}{2r}$ c) $\frac{2C}{r}$ d) $\frac{C}{3r}$

27) What is the radius length of a circle whose circumference is 13π cm ?

- a) $\frac{\pi}{2}$ cm b) 6.5 cm c) 13 cm d) 26 cm

28) What is the diameter length of a circle whose area is 36π square inches?

- a) 6 inches b) 12 inches c) 18 inches d) 36 inches

29) The area of a circle is $4\pi \text{ cm}^2$. What is its circumference?

- a) $16\pi^2$ cm b) 16π cm c) 8π cm d) 4π cm

30) The circumference of a circle is 10π cm, what is its area?

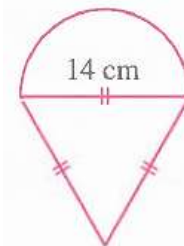
- a) $25\pi \text{ cm}^2$ b) $50\pi \text{ cm}^2$ c) $75\pi \text{ cm}^2$ d) $100\pi \text{ cm}^2$

31) The areas of two circles are 64π , 100π , what is the ratio between their circumferences?

- a) 3 : 4 b) 4 : 5 c) 9 : 16 d) 16 : 25

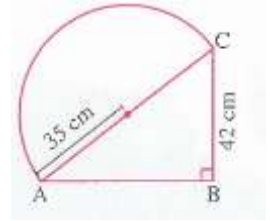
32) The perimeter of the figure =

- a) $14(\pi + 3)\text{cm}$ b) $7(\pi + 6)\text{cm}$
c) $14(\pi + 2)\text{cm}$ d) $7(\pi + 4)\text{cm}$



33) The perimeter of the figure $\approx$ where ($\pi \approx 3.14$)

- a) 208 cm b) 278 cm
c) 318 cm d) 388 cm



34) The perimeter of the colored part $\approx$ where ($\pi \approx 3.14$)

- a) 11 cm b) 14 cm
c) 25 cm d) 36 cm



35) A right circular cylinder, whose base radius length is r cm and its height is h cm . , what is its volume?

- a) $\frac{1}{2}\pi r^2 h \text{ cm}^3$ b) $\pi r^2 h \text{ cm}^3$ c) $2\pi r^2 h \text{ cm}^3$ d) $\pi r h^2 \text{ cm}^3$

36) A right circular cylinder whose base radius length is r cm and its height is h cm , what is its surface area?

- a) $2\pi rh$ b) $2\pi r^2 h$ c) $2\pi r(h + r)$ d) $2\pi h(h + r)$

37) A right circular cylinder whose base radius length is 5 cm , and its height is 15 cm , what is its surface area?

- a) $75\pi \text{ cm}^2$ b) $200\pi \text{ cm}^2$ c) $250\pi \text{ cm}^2$ d) $375\pi \text{ cm}^2$

38) A right circular cylinder whose base diameter length is 10 cm. and its height is 15 cm. , what is its volume?

- a) $75\pi \text{ cm}^3$ b) $150\pi \text{ cm}^3$ c) $375\pi \text{ cm}^3$ d) $1500\pi \text{ cm}^3$

39) A right circular cylinder whose volume is $320\pi \text{ cm}^3$, and its height is 20 cm . , what is the diameter length of its base?

- a) 2 cm b) 4 cm c) 8 cm d) 16 cm

40) If the lateral area of a right circular cylinder equals $2\pi r^2 \text{ cm}^2$, what is its height?

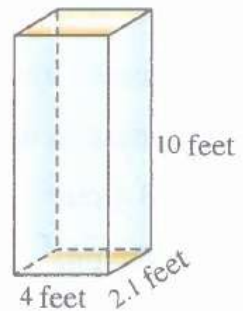
- a) $\frac{1}{2}r \text{ cm}$ b) $\frac{3}{4}r \text{ cm}$ c) $r \text{ cm}$ d) $2r \text{ cm}$

41) A right circular cylinder whose base circumference is $14\pi \text{ cm}$ and its height is 3 cm , what is its volume?

- a) $49\pi \text{ cm}^3$ b) $98\pi \text{ cm}^3$ c) $147\pi \text{ cm}^3$ d) $196\pi \text{ cm}^3$

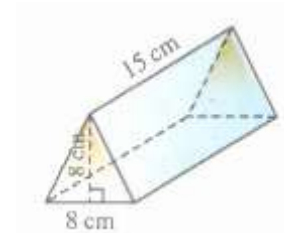
42) What is the volume of the given rectangular prism?

- a) 64 cubic feet. b) 76 cubic feet.
c) 84 cubic feet. d) 122 cubic feet.



43) What is the volume of the given triangular prism?

- a) 160 cm^3 b) 320 cm^3
c) 400 cm^3 b) 480 cm^3



44) A prism with a square base of side length 7 cm and a height of 4 cm , then it has a lateral area of cm^2

- a) 28 b) 56 c) 84 d) 112

45) If the base of a right prism is an equilateral triangle with side length 5 cm . and the height of the prism equals 4 cm , what is the lateral area of the prism?

- a) 15 cm^2 b) 30 cm^2 c) 60 cm^2 d) 240 cm^2

- 46) A right pentagonal prism whose base is a regular pentagon with area 10 m^2 , and the area of one of its lateral rectangles is 9 m^2 . what is the total area of the prism?
- a) 19 m^2 b) 38 m^2 c) 55 m^2 d) 65 m^2
- 47) What is the distance between the point $A(-3,4)$ and the origin point?
- a) 3 units of length. b) 4 units of length.
c) 5 units of length. d) 7 units of length.
- 48) The distance between the point $(\sqrt{3}, 1)$ and the origin point is unit(s) of length.
- a) 4 b) 3 c) 2 d) 1
- 49) If O is the origin point, $A(x, 5)$ and $OA = 13$ units of length, what is the value of x ?
- a) -12 b) 12 c) ± 12 d) 144
- 50) The distance between the two points $(3, a), (-1, a)$ is units of length.
- a) 16 b) 9 c) 5 d) 4
- 51) What is the length of the radius of the circle whose center is $(7, 4)$ and passes through the point $(3, 1)$?
- a) 5 units of length. b) -5 units of length.
c) 2.5 units of length. d) 25 units of length.
- 52) If $ABCD$ is a square, $A(3, 5), B(4, 2)$ what is the area of the square $ABCD$?
- a) $\sqrt{10}$ square units. b) 10 square units.
c) $4\sqrt{10}$ square units. d) 40 square units.

53) What is the distance between the point $(-5, -2)$ and the y - axis ?

- a) -5 units of length. b) -2 units of length.
c) 2 units of length. d) 5 units of length.

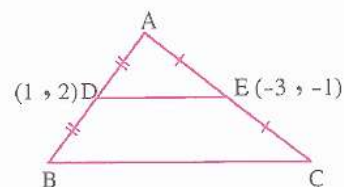
54) What is the distance between the point $(-4, \ell)$ and the x - axis where $\ell \in \mathbb{R}$?

- a) 4 units of length. b) ℓ units of length.
c) -4 units of length. d) $|\ell|$ units of length.

55) In the given figure:

What is the length of $\overline{BC}$?

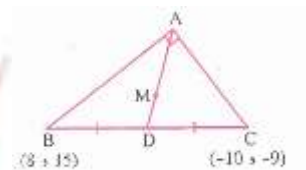
- a) 12 units of length. b) 10 units of length.
c) 8 units of length. d) 5 units of length.



56) In the given figure:

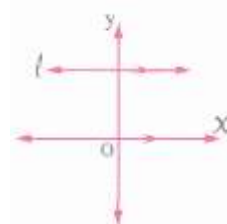
If M is the intersection point of the medians of triangle ABC , what is the length of $\overline{DM}$?

- a) 5 units of length. b) 6 units of length.
c) 7 units of length. d) 8 units of length.



57) In the given figure: What is the slope of the straight line ℓ ?

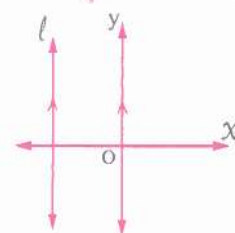
- a) 1 b) -1
c) 0 d) undefined



58) In the given figure:

What is the slope of the straight line ℓ ?

- a) 1 b) -1
c) 0 d) undefined

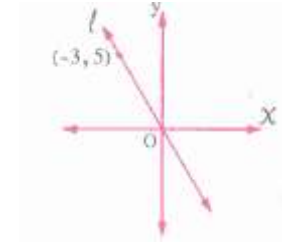


59) In the given figure:

What is the slope of the straight line ℓ ?

a) $\frac{5}{3}$
c) $-\frac{3}{5}$

b) $\frac{3}{5}$
d) $-\frac{5}{3}$

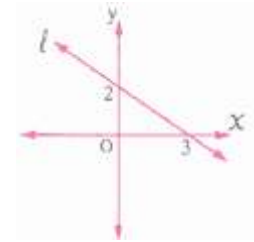


60) In the given figure:

What is the slope of the straight line ℓ ?

a) $\frac{2}{3}$
c) $\frac{3}{2}$

b) $-\frac{2}{3}$
d) $-\frac{3}{2}$



61) What is the slope of the straight line passing through the two points A(3, 2), B(4, 2) ?

a) 2

b) 1

c) 0

d) undefined

62) If the slope of the straight line passing through the two points $(-4, k)$, $(6, -7)$, equal $-\frac{1}{3}$, what is the value of k ?

a) 23

b) -23

c) $\frac{11}{3}$

d) $-\frac{11}{3}$

63) In the given figure:

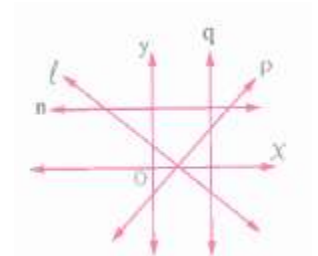
Which of the four straight lines has a negative slope ?

a) ℓ

b) n

c) q

d) p



64) In the given figure:

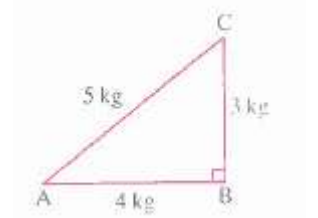
What is the slope of the road $\overrightarrow{AC}$?

a) $\frac{4}{3}$

b) $\frac{3}{4}$

c) $\frac{3}{5}$

d) $\frac{4}{5}$



65) The points in the table lie on a straight line.
What is the slope of the straight line?

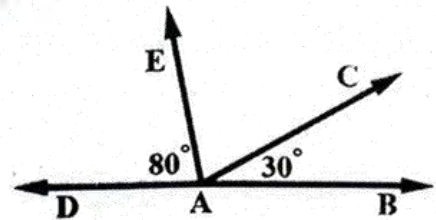
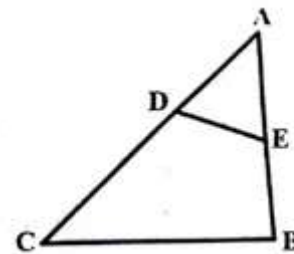
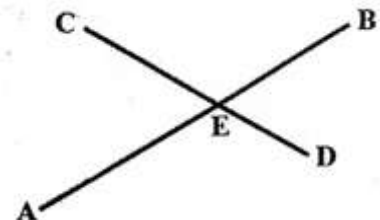
a) $-\frac{1}{3}$

b) -3

c) -4

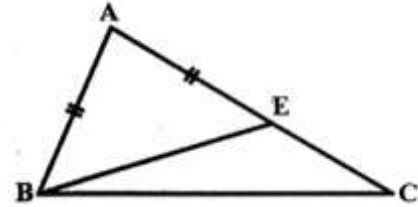
d) 4

x	-3	-2	-1	0
y	5	2	-1	-4

Q2 Answer the following :-1) In the opposite figureif the points A,B,C and D are collinear , $AB < DC$ prove that $DB > AC$ 2) In the opposite figure $A \in \overleftrightarrow{DB}$, $m(\angle CAB) = 30^\circ$, $m(\angle EAD) = 80^\circ$ Prove that $m(\angle DAC) > m(\angle BAE)$ 3) In the opposite figureABC is triangle in which $AC > AB$, $D \in \overline{AC}$, $E \in \overline{AB}$, such that $m(\angle ADE) = m(\angle AED)$, prove that $DC > EB$ 4) In the opposite figure $EB > ED$, $EA > EC$, prove that $AB > CD$ 

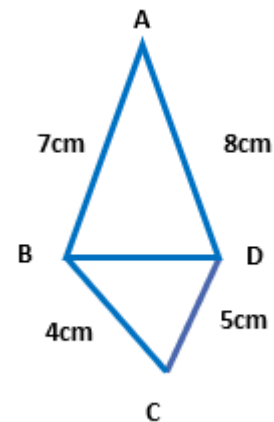
5) In the opposite figure

$C \in \overline{AE}$, $AB = AE$ Prove $m(\angle ABE) > m(\angle C)$

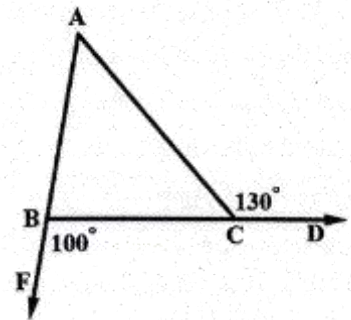


6) ABC is a triangle in which $m(\angle A) = 30^\circ$, $m(\angle B) = 70^\circ$, arrange the side lengths of the triangle in a descending order .

7) ABCD is a quadrilateral in which $AB=7\text{cm}$, $BC=4\text{cm}$, $CD=5\text{cm}$, $AD=8\text{cm}$.
Prove $m(\angle ABC) > m(\angle ADC)$



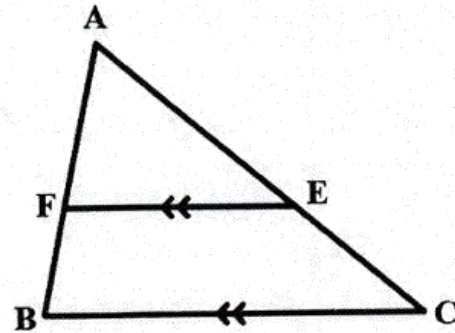
8) ABC is a triangle in which $D \in \overline{BC}$, $F \in \overline{AB}$,
 $m(\angle ACD) = 130^\circ$, $m(\angle FBC) = 100^\circ$,
prove that $AC > AB$



9) In the opposite figure

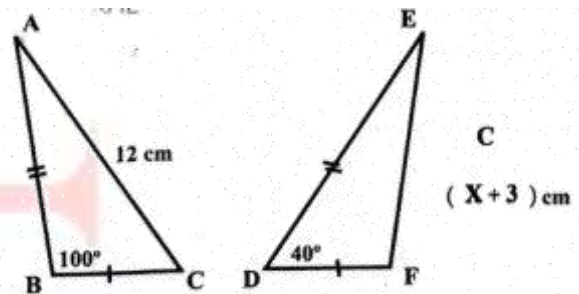
ABC is a triangle in which $AC > AB$

$\overline{FE} \parallel \overline{BC}$, Prove $m(\angle AFE) > m(\angle AEF)$



10) In the opposite figure

Find all possible values of x .

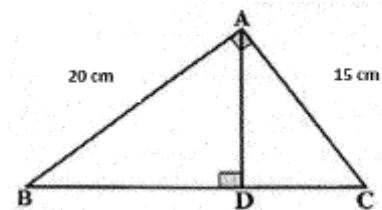


11) In the opposite figure find the length of

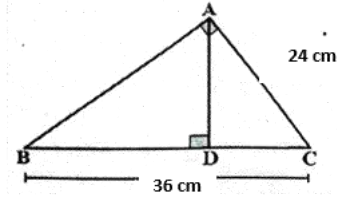
Projection of $\overline{AC}$ on $\overline{BC}$

Projection of $\overline{AB}$ on $\overline{BC}$

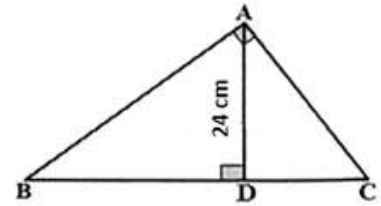
Projection of $\overline{AD}$ on $\overline{BC}$



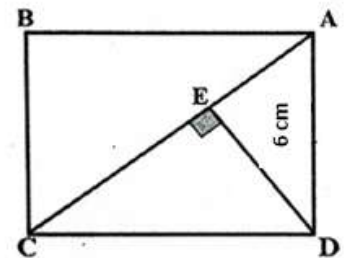
12) In the opposite figure find the length of AB , DC



13) In the opposite figure find the length of DC × DB



14) ABCD is a rectangle its area is 48 cm^2 $DE \perp AC$,
AD = 6cm . find CD , AC , ED

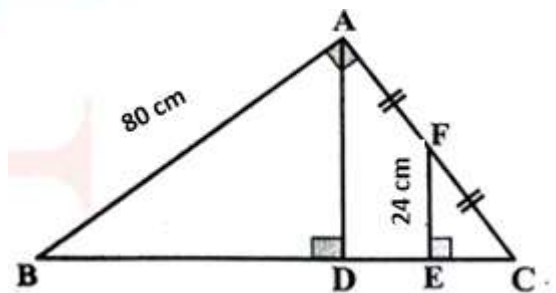


15) In the opposite figure

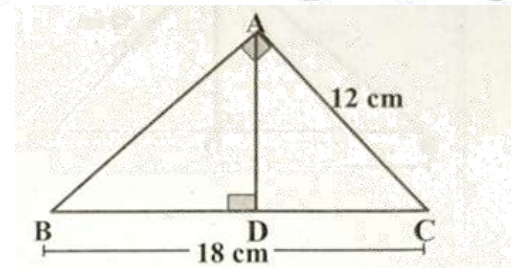
$AD \perp BC$, $m(\angle BAC) = 90^\circ$

$FE = 24 \text{ cm}$, $AB = 80 \text{ cm}$, $FA = FC$

Find EC .



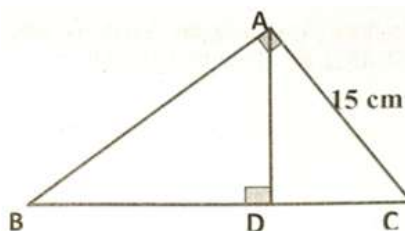
16) In the opposite figure: find DC



17) In the opposite figure:

ABC is a triangle, its area is 150 cm^2

Find: AB, AD



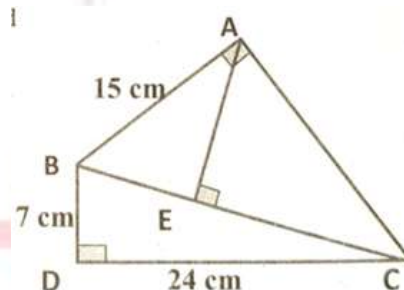
18) In the opposite figure:

ABC is a right-angled triangle at A,

BDC is a right-angled triangle at D,

$AE \perp BC$.

Find: BC, AC, AE



19) Draw a circle N with a diameter of 6cm.

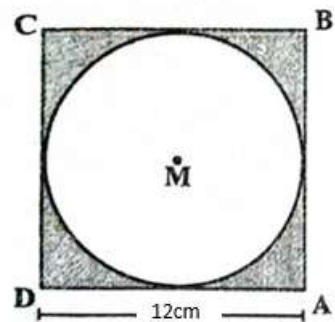
20) Find the circumference of the circle with a diameter of 8 feet ($\pi \approx 3.14$)

21) A truck tire has a diameter of 120cm , what is the circumference of the tire ? if the tire makes a complete revolution what distance does the truck cover ?

How many revolutions does the tire need to cover a distance of 200 Km? ($\pi \approx 3.14$)

22) Find the area of a circle with a radius of 12 cm ? ($\pi \approx 3.14$)

23) Circle M touches the sides of squares ABCD from the inside where AD = 12cm. Find the circumference and area of the shaded region ($\pi \approx 3.14$)



24) Right circular cylinder has a base diameter of 12 cm and a height of 8 cm. Find its volume, lateral area, and total area. ($\pi = 3.14$)

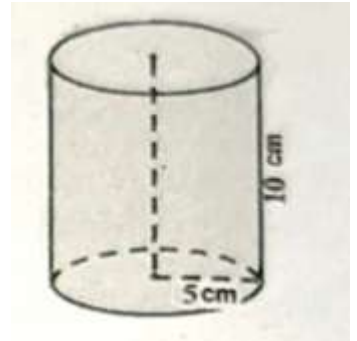
25) Right circular cylinder has a volume of 1540 cm^3 and a base radius of 7 cm. Find its height, lateral area. ($\pi = \frac{22}{7}$)

26) A right quadrilateral prism has a square base with a side length of 8 cm and a height of 10 cm. Find the volume of the prism, its total area.

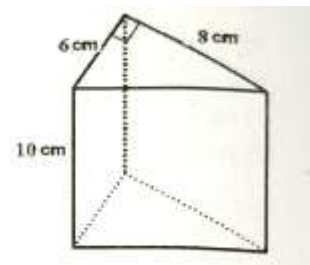
27) A right triangular prism has a height of 10 cm and a volume of 120 cm^3 . Find the area of its base.

28) Which one has a larger volume? Right circular cylinder has a base diameter of 14 cm and a height of 10 cm, or a right quadrilateral prism has a square base with a side length of 10 cm and a height of 14 cm.

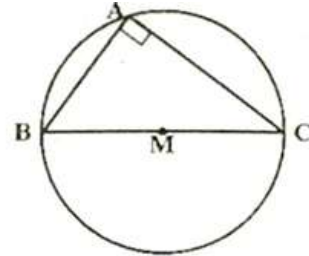
29) In the figure opposite: A right circular cylinder with a radius of 5 cm and a height of 10 cm. Find the volume of the cylinder.



30) In the figure opposite: A right triangular prism with a height of 10 cm and a base that is a right triangle, with the lengths of the legs being 6 cm, 8 cm. Find the lateral area of the prism.



31) In the figure opposite: $AB = 6$ cm, $AC = 8$ cm. Find the area and circumference of circle M in terms of π .



32) If $A(3, -5)$, $B(7, -2)$ find AB .

33) If the distance between the two points $B(3, 2)$, $A(K, 8)$ is equal to 10 units of length find the value of K .

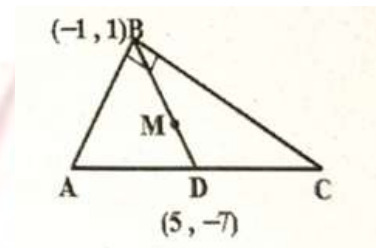
34) If $A(3, 1)$, $B(-5, 1)$, $C(-1, 4)$ prove that the points A, B, C are not collinear.

35) If $A(0, 6)$, $B(6, 0)$, $C(2, -4)$, $D(-4, 2)$ prove that the points A, B, C, D are the vertices of a rectangle.

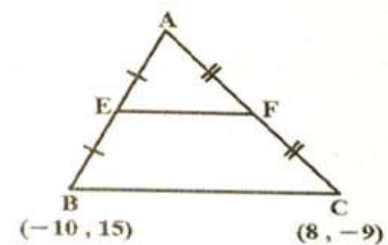
36) Find the area of the circle whose center is the point $M(-3, 2)$ and passes through the point $A(3, -6)$

37) Find the circumference of the circle whose center is $M(15, 10)$ and passes through the point $A(3, -6)$.

38) In the opposite figure, M is the intersection point of the medians of triangle ABC . Find AC .



39) In the opposite figure, find EF .

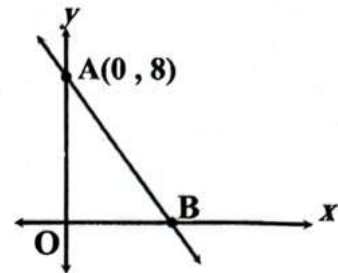


40) If the slope of the straight line passing through the two points $(k, 9)$, $(7, 2)$ is 7, find the value of k .

41) If the straight line passes through the two points $(5, 1)$, $(3, k)$ and is parallel to x -axis, find the value of k .

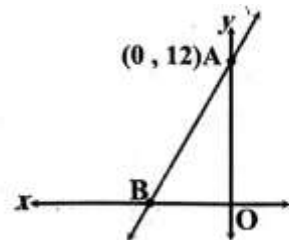
42) In the opposite figure:

If the area of triangle OAB is 20 square units, find the slope of the straight line AB .



43) In the opposite figure:

If the area of triangle OBA is 18 square units, find the slope of the straight line AB .



Answers

Unit 3

Q1 Choose the correct answer :-

1) The sum of the lengths of any two sides in a triangle the length of the third side.

- a) is less than b) is greater than c) is equal to d) half

2) The length of any side in a triangle the sum of the lengths of the other two sides.

- a) $>$ b) $<$ c) $=$ d) is double

3) If the lengths of two sides in a triangle are 7 cm and 4 cm then the length of the third could be

- a) 1 cm b) 2 cm c) 3 cm d) 4 cm

4) In $\triangle ABC$, if $AB = 3$ cm, $BC = 5$ cm, and $AC = x$ cm, then : $x \in$

- a) $]3, 5[$ b) $]2, 5[$ c) $]5, 8[$ d) $]2, 8[$

5) In $\triangle ABC$, $AB + BC - AC$

- a) $> \text{zero}$ b) $< \text{zero}$
c) $= \text{zero}$ d) $= \text{the perimeter of } \triangle ABC$

6) In the given figure:

Which of the following statements is true?



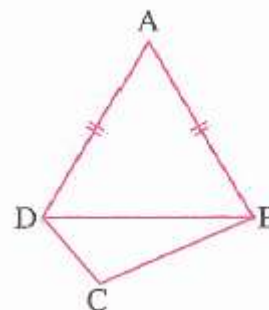
- a) $AB < CD$ b) $AC < BD$ c) $AC > BD$ d) $AC = BD$

7) In the given figure:

$m(\angle DBC) < m(\angle BDC)$, $AB = AD$

then: $m(\angle ABC)$ $m(\angle ADC)$

- a) $<$ b) $>$
c) $=$ d) $\geq$



8) If $AB = 7$ cm, $BC = 5$ cm, $AC = 6$ cm, then the smallest angle in measure is

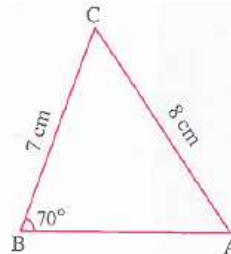
- a) $\angle A$ b) $\angle B$ c) $\angle C$ d) $\angle ABC$

9) In $\triangle EFG$: If $FG > EF$, then $m(\angle E) > \dots\dots\dots$

- a) 90° b) $m(\angle GEF)$ c) $m(\angle F)$ d) $m(\angle G)$

10) In the given figure: $m(\angle A)$ could be equal

- a) 70° b) 80°
c) 60° d) 75°

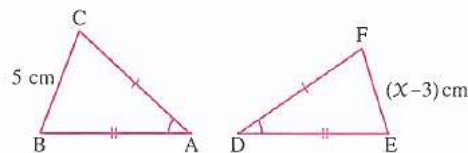


11) If ABC is a triangle in which: $m(\angle B) = 90^\circ$ then:

- a) $BC < AC$ b) $AC < AB$ c) $AC < BC$ d) $AC = AB$

12) In the given figure: If $m(\angle A) > m(\angle D)$, What is the possible value of from the following values?

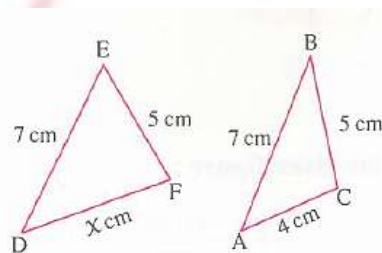
- a) 2 b) 3
c) 7 d) 9



13) In the given figure:

If $m(\angle E) > m(\angle B)$, what is the inequality that expresses the possible values of x ?

- a) $2 < x < 12$ b) $4 < x < 12$
c) $4 < x < 16$ d) $x > 12$



14) The projection of a point on given a straight line is

- a) a point. b) a line segment.
c) a ray. d) straight line.

15) The projection of a line segment on a straight line that is not perpendicular to it is

- a) a ray. b) a point.
c) a line segment. d) a straight line.

16) The length of the projection of a line segment on a given straight line is the length of the line segment itself.

- a) $\leq$ b) $>$ c) $\geq$ d) $=$

17) The length of the projection of a line segment on a given perpendicular straight line

- a) is greater than the length of the original segment.
b) equals the length of the original segment.
c) is greater than or equal to the length of the original segment.
d) equals zero.

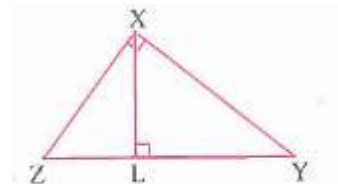
18) If $\overline{XY} \parallel \overline{AB}$, then the length of the projection of $\overline{AB}$ on $\overline{XY}$ the length of $\overline{AB}$

- a) $>$ b) $<$ c) $=$ d) $\geq$

19) In the given figure:

$$LZ \times YL = \dots\dots\dots$$

- a) $(XL)^2$ b) $(XY)^2$
c) $(XZ)^2$ d) $(YZ)^2$



20) The circumference of the circle =

- a) $2\pi r$ b) πr c) $4\pi r$ d) $2\pi d$

21) What is the circumference of a circle with a radius length of 20 cm ?

- a) 10π cm b) 20π cm c) 40π cm d) 80π cm

22) What is the area of the circle whose radius length is 10 m ?

- a) 5π m² b) 10π m² c) 25π m² d) 100π m²



23) What is the area of a circle whose diameter length is 1.4 cm? ($\pi \approx \frac{22}{7}$)

- a) 1.4 cm² b) 1.08 cm² c) 1.54 cm² d) 6.16 cm²

24) In any circle, what is the value of $\frac{C}{d}$?

- a) $\frac{\pi}{2}$ b) $\frac{2}{\pi}$ c) π d) 2π

25) The radius length of a circle is 1 foot, then its area = square feet.

- a) $\frac{1}{2}\pi$ b) π c) 2π d) π^2

26) $\pi =$

- a) $\frac{C}{r}$ b) $\frac{C}{2r}$ c) $\frac{2C}{r}$ d) $\frac{C}{3r}$

27) What is the radius length of a circle whose circumference is 13π cm ?

- a) $\frac{\pi}{2}$ cm b) 6.5 cm c) 13 cm d) 26 cm

28) What is the diameter length of a circle whose area is 36π square inches?

- a) 6 inches b) 12 inches c) 18 inches d) 36 inches

29) The area of a circle is 4π cm². What is its circumference?

- a) $16\pi^2$ cm b) 16π cm c) 8π cm d) 4π cm

30) The circumference of a circle is 10π cm, what is its area?

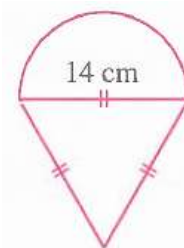
- a) 25π cm² b) 50π cm² c) 75π cm² d) 100π cm²

31) The areas of two circles are 64π , 100π , what is the ratio between their circumferences?

- a) 3 : 4 b) 4 : 5 c) 9 : 16 d) 16 : 25

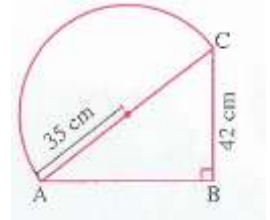
32) The perimeter of the figure =

- a) $14(\pi + 3)$ cm b) $7(\pi + 6)$ cm
c) $14(\pi + 2)$ cm d) $7(\pi + 4)$ cm



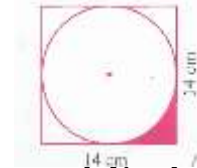
33) The perimeter of the figure $\approx$ where ($\pi \approx 3.14$)

- a) 208 cm b) 278 cm
c) 318 cm d) 388 cm



34) The perimeter of the colored part $\approx$ where ($\pi \approx 3.14$)

- a) 11 cm b) 14 cm
c) 25 cm d) 36 cm



35) A right circular cylinder, whose base radius length is r cm and its height is h cm . , what is its volume?

- a) $\frac{1}{2}\pi r^2 h \text{ cm}^3$ b) $\pi r^2 h \text{ cm}^3$ c) $2\pi r^2 h \text{ cm}^3$ d) $\pi r h^2 \text{ cm}^3$

36) A right circular cylinder whose base radius length is r cm and its height is h cm , what is its surface area?

- a) $2\pi rh$ b) $2\pi r^2 h$ c) $2\pi r(h + r)$ d) $2\pi h(h + r)$

37) A right circular cylinder whose base radius length is 5 cm , and its height is 15 cm , what is its surface area?

- a) $75\pi \text{ cm}^2$ b) $200\pi \text{ cm}^2$ c) $250\pi \text{ cm}^2$ d) $375\pi \text{ cm}^2$

38) A right circular cylinder whose base diameter length is 10 cm. and its height is 15 cm. , what is its volume?

- a) $75\pi \text{ cm}^3$ b) $150\pi \text{ cm}^3$ c) $375\pi \text{ cm}^3$ d) $1500\pi \text{ cm}^3$

39) A right circular cylinder whose volume is $320\pi \text{ cm}^3$, and its height is 20 cm . , what is the diameter length of its base?

- a) 2 cm b) 4 cm c) 8 cm d) 16 cm

40) If the lateral area of a right circular cylinder equals $2\pi r^2 \text{ cm}^2$, what is its height?

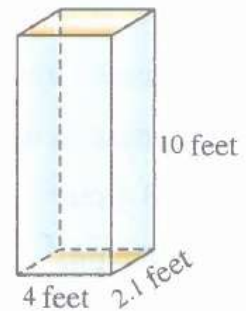
- a) $\frac{1}{2}r \text{ cm}$ b) $\frac{3}{4}r \text{ cm}$ c) $r \text{ cm}$ d) $2r \text{ cm}$

41) A right circular cylinder whose base circumference is $14\pi \text{ cm}$ and its height is 3 cm , what is its volume?

- a) $49\pi \text{ cm}^3$ b) $98\pi \text{ cm}^3$ c) $147\pi \text{ cm}^3$ d) $196\pi \text{ cm}^3$

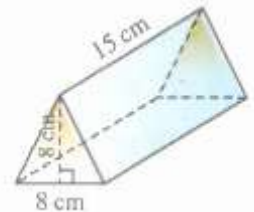
42) What is the volume of the given rectangular prism?

- a) 64 cubic feet. b) 76 cubic feet.
c) 84 cubic feet. d) 122 cubic feet.



43) What is the volume of the given triangular prism?

- a) 160 cm^3 b) 320 cm^3
c) 400 cm^3 b) 480 cm^3



44) A prism with a square base of side length 7 cm and a height of 4 cm , then it has a lateral area of cm^2

- a) 28 b) 56 c) 84 d) 112

45) If the base of a right prism is an equilateral triangle with side length 5 cm . and the height of the prism equals 4 cm , what is the lateral area of the prism?

- a) 15 cm^2 b) 30 cm^2 c) 60 cm^2 d) 240 cm^2



- 46) A right pentagonal prism whose base is a regular pentagon with area 10 m^2 , and the area of one of its lateral rectangles is 9 m^2 . what is the total area of the prism?
- a) 19 m^2 b) 38 m^2 c) 55 m^2 d) 65 m^2
- 47) What is the distance between the point $A(-3,4)$ and the origin point?
- a) 3 units of length. b) 4 units of length.
c) 5 units of length. d) 7 units of length.
- 48) The distance between the point $(\sqrt{3}, 1)$ and the origin point is unit(s) of length.
- a) 4 b) 3 c) 2 d) 1
- 49) If O is the origin point, $A(x, 5)$ and $OA = 13$ units of length, what is the value of x ?
- a) -12 b) 12 c) ± 12 d) 144
- 50) The distance between the two points $(3, a), (-1, a)$ is units of length.
- a) 16 b) 9 c) 5 d) 4
- 51) What is the length of the radius of the circle whose center is $(7, 4)$ and passes through the point $(3, 1)$?
- a) 5 units of length. b) -5 units of length.
c) 2.5 units of length. d) 25 units of length.
- 52) If ABCD is a square, $A(3, 5), B(4, 2)$ what is the area of the square ABCD?
- a) $\sqrt{10}$ square units. b) 10 square units.
c) $4\sqrt{10}$ square units. d) 40 square units.
- 53) What is the distance between the point $(-5, -2)$ and the y – axis ?
- a) -5 units of length. b) -2 units of length.
c) 2 units of length. d) 5 units of length.



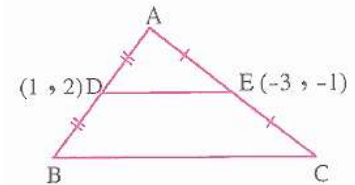
54) What is the distance between the point $(-4, \ell)$ and the x -axis where $\ell \in \mathbb{R}$?

- a) 4 units of length. b) ℓ units of length.
c) -4 units of length. d) $|\ell|$ units of length.

55) In the given figure:

What is the length of $\overline{BC}$?

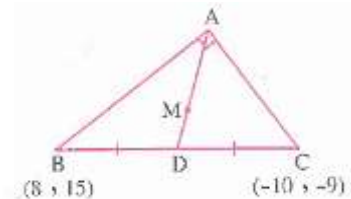
- a) 12 units of length. b) 10 units of length.
c) 8 units of length. d) 5 units of length.



56) In the given figure:

If M is the intersection point of the medians of triangle ABC, what is the length of $\overline{DM}$?

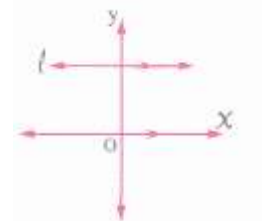
- a) 5 units of length. b) 6 units of length.
c) 7 units of length. d) 8 units of length.



57) In the given figure:

What is the slope of the straight line ℓ ?

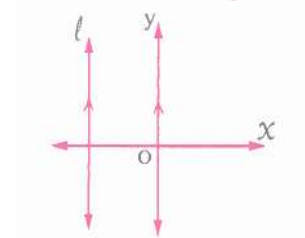
- a) 1 b) -1
c) 0 d) undefined



58) In the given figure:

What is the slope of the straight line ℓ ?

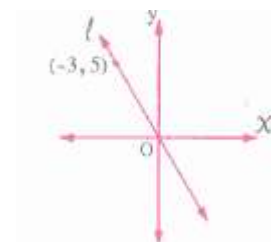
- a) 1 b) -1
c) 0 d) undefined



59) In the given figure:

What is the slope of the straight line ℓ ?

- a) $\frac{5}{3}$ b) $\frac{3}{5}$
c) $-\frac{3}{5}$ d) $-\frac{5}{3}$

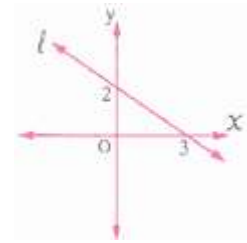


60) In the given figure:

What is the slope of the straight line ℓ ?

a) $\frac{2}{3}$
c) $\frac{3}{2}$

b) $-\frac{2}{3}$
d) $-\frac{3}{2}$



61) What is the slope of the straight line passing through the two points $A(3, 2), B(4, 2)$?

a) 2

b) 1

c) 0

d) undefined

62) If the slope of the straight line passing through the two points $(-4, k), (6, -7)$, equal $-\frac{1}{3}$, what is the value of k ?

a) 23

b) -23

c) $\frac{11}{3}$

d) $-\frac{11}{3}$

63) In the given figure:

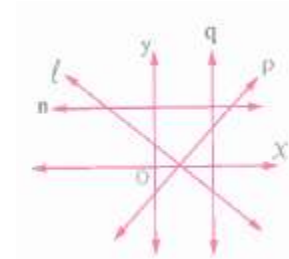
Which of the four straight lines has a negative slope ?

a) ℓ

b) n

c) q

d) p



64) In the given figure:

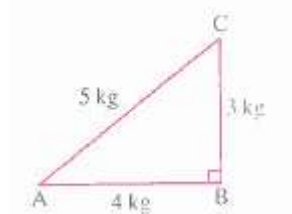
What is the slope of the road $\overrightarrow{AC}$?

a) $\frac{4}{3}$

b) $\frac{3}{4}$

c) $\frac{3}{5}$

d) $\frac{4}{5}$



65) The points in the table lie on a straight line.

What is the slope of the straight line?

a) $-\frac{1}{3}$

b) -3

c) -4

d) 4

x	-3	-2	-1	0
y	5	2	-1	-4



Q2 Answer the following :-1) In the opposite figure

if the points A,B,C and D are collinear , $AB < DC$ prove that $DB > AC$

$$\therefore AB < DC$$

By adding BC to both

$$\therefore AB + BC < DC + BC$$

$$\therefore AC < DB$$

2) In the opposite figure

$A \in \overrightarrow{DB}$, $m(\angle CAB) = 30^\circ$, $m(\angle EAD) = 80^\circ$

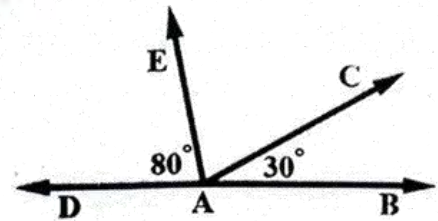
Prove that $m(\angle DAC) > m(\angle BAE)$

$$\therefore A \in \overrightarrow{DB} , m(\angle CAB) < m(\angle EAD)$$

By adding $(\angle EAC)$ to both

$$\therefore m(\angle CAB) + (\angle EAC) < m(\angle EAD) + (\angle EAC)$$

$$\therefore m(\angle DAC) > m(\angle BAE)$$

3) In the opposite figure

ABC is triangle in which $AC > AB$, $D \in \overline{AC}$, $E \in \overline{AB}$, such that $m(\angle ADE) = m(\angle AED)$, prove that $DC > EB$

$$\therefore AC > AB \quad 1$$

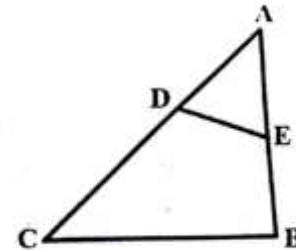
$$\therefore m(\angle ADE) = m(\angle AED)$$

$$\therefore AD = AE \quad 2$$

By subtracting 2 from 1

$$\therefore AC - AD > AB - AE$$

$$\therefore DC > EB$$

4) In the opposite figure

$EB > ED$, $EA > EC$, prove that $AB > CD$

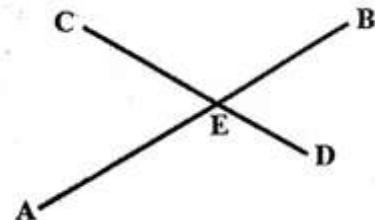
$$\therefore EB > ED \quad 1$$

$$EA > EC \quad 2$$

By adding 1 and 2

$$\therefore EB + EA > ED + EC$$

$$\therefore AB > CD$$



5) In the opposite figure

$C \in \overline{AE}$, $AB = AE$ Prove $m(\angle ABE) > m(\angle C)$

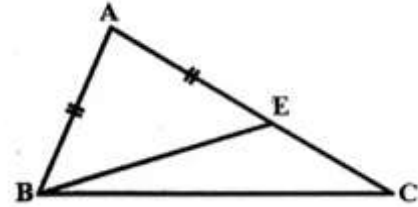
$$\therefore AB = AE$$

$$\therefore m(\angle ABE) = m(\angle AEB)$$

$$\therefore AE + EC > AB$$

$$\therefore AC > AB$$

$$\therefore m(\angle ABE) > m(\angle C)$$



6) ABC is a triangle in which $m(\angle A) = 30^\circ$, $m(\angle B) = 70^\circ$, arrange the side lengths of the triangle in a descending order .

AB , AC , CB

7) ABCD is a quadrilateral in which $AB=7\text{cm}$, $BC=4\text{cm}$, $CD=5\text{cm}$, $AD=8\text{cm}$.
Prove $m(\angle ABC) > m(\angle ADC)$

In triangle ABD:

$$\therefore AD > AB$$

$$m(\angle ABD) > m(\angle ADB) \quad (1)$$

In triangle CBD:

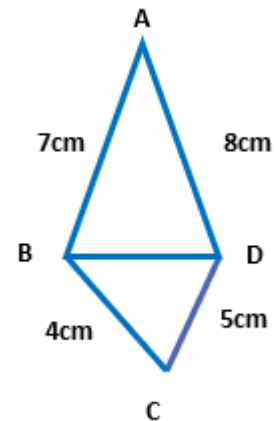
$$\therefore CD > BC$$

$$m(\angle DBC) > m(\angle CDB) \quad (2)$$

By adding (1) and (2):

$$m(\angle ABD) + m(\angle DBC) > m(\angle ADB) + m(\angle CDB)$$

$$\therefore m(\angle ABC) > m(\angle ADC)$$



8) ABC is a triangle in which $D \in \overrightarrow{BC}$, $F \in \overrightarrow{AB}$,
 $m(\angle ACD) = 130^\circ$, $m(\angle FBC) = 100^\circ$,
prove that $AC > AB$

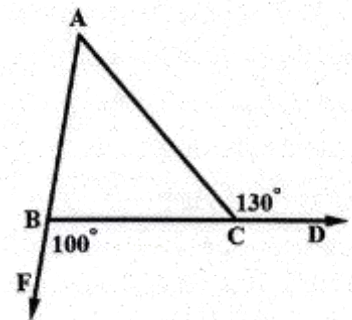
$$\therefore m(\angle ACD) + m(\angle ACB) = 180 \quad (\text{straight angle})$$

$$\therefore m(\angle ACB) = 180 - 130 = 50$$

$$\therefore m(\angle FBC) + m(\angle ABC) = 180 \quad (\text{straight angle})$$

$$\therefore m(\angle ABC) = 180 - 100 = 80$$

$$\therefore m(\angle ABC) > m(\angle ACB) \quad (80 > 50)$$



∴ the side opposite the larger angle is longer:

$$\therefore AC > AB$$

9) In the opposite figure

ABC is a triangle in which $AC > AB$

$\overline{FE} \parallel \overline{BC}$, Prove $m(\angle AFE) > m(\angle AEF)$

$$\therefore AC > AB$$

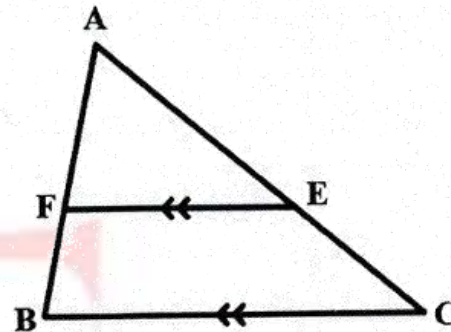
$$\therefore m(\angle ABC) > m(\angle ACB)$$

$$\therefore FE \parallel BC$$

$$\therefore m(\angle ABC) = m(\angle AFE) \text{ (corresponding angles)}$$

$$\therefore m(\angle ACB) = m(\angle AEF) \text{ (corresponding angles)}$$

$$\therefore m(\angle AFE) > m(\angle AEF)$$



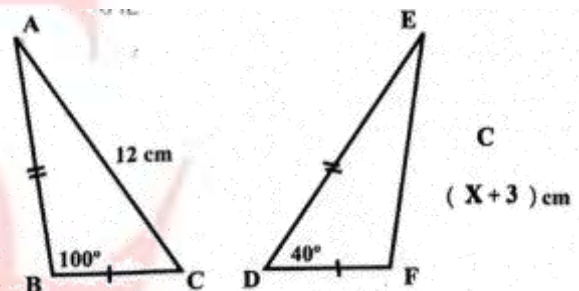
10) In the opposite figure

Find all possible values of x .

$$\therefore AB = DE, \quad BC = DF$$

$$m(\angle B) > m(\angle D)$$

$$\therefore AC > EF$$



$$AC = 12 \text{ cm}$$

$$EF = (x + 3) \text{ cm}$$

$$x + 3 < 12$$

$$x < 9$$

$$x + 3 > 0$$

$$x > -3$$

$$-3 < x < 9$$



11) In the opposite figure find the length of

Projection of $\overline{AC}$ on $\overline{BC}$

Projection of $\overline{AB}$ on $\overline{BC}$

Projection of $\overline{AD}$ on $\overline{BC}$

Projection of $\overline{AC}$ on $\overline{BC}$

$$BC = \sqrt{225 + 400} = 25$$

$$AD = \frac{15 \times 20}{25} = 12$$

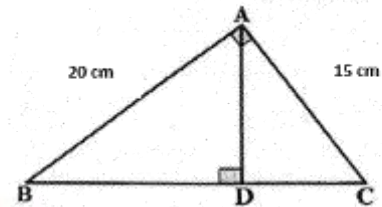
$$DC = \sqrt{225 - 144} = 9$$

Projection of $\overline{AB}$ on $\overline{BC}$

$$BD = \sqrt{400 + 144} = 16$$

Projection of $\overline{AD}$ on $\overline{BC}$

point D

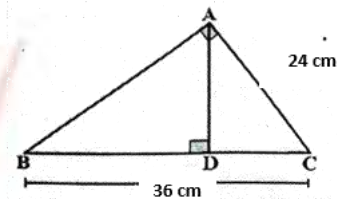


12) In the opposite figure find the length of AB , DC

$$AB = 12\sqrt{5}$$

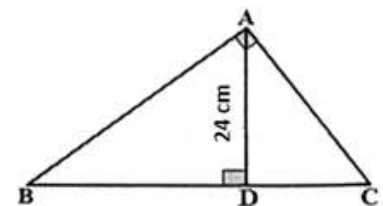
$$AD = 8\sqrt{5}$$

$$DC = 16$$

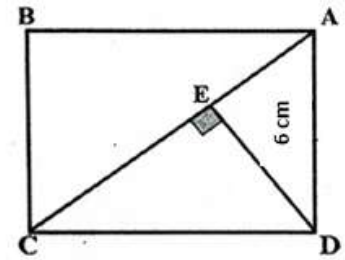


13) In the opposite figure find the length of $DC \times DB$

$$= 576 \text{ cm}$$

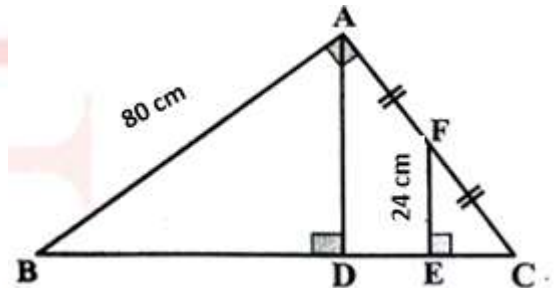


14) ABCD is a rectangle its area is 48 cm^2 $DE \perp AC$,
 $AD = 6 \text{ cm}$. find CD , AC , ED
 $= 4.8 \text{ cm}$

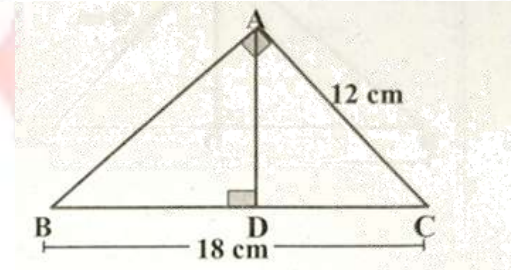


15) In the opposite figure

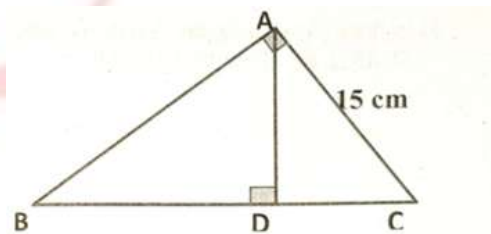
$AD, FE \perp BC$, $m(\angle BAC) = 90^\circ$
 $FE = 24 \text{ cm}$, $AB = 80 \text{ cm}$, $FA = FC$
 Find EC .
 $= 18 \text{ cm}$



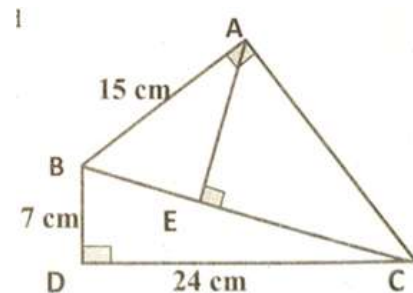
16) In the opposite figure: find DC
 $= 8 \text{ cm}$



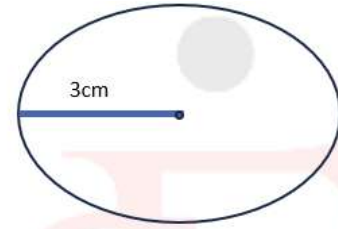
17) In the opposite figure:
 ABC is a triangle, its area is 150 cm^2
 Find: AB , AD
 $AB = 20 \text{ cm}$
 $AD = 12 \text{ cm}$



18) In the opposite figure:
 ABC is a right-angled triangle at A ,
 BDC is a right-angled triangle at D ,
 $AE \perp BC$.
 Find: BC , AC , AE
 $BC = 25 \text{ cm}$
 $AC = 20 \text{ cm}$
 $AE = 12 \text{ cm}$



19) Draw a circle N with a diameter of 6cm.



20) Find the circumference of the circle with a diameter of 8 feet ($\pi \approx 3.14$)

25.12 cm

21) A truck tire has a diameter of 120cm , what is the circumference of the tire ? if the tire makes a complete revolution what distance does the truck cover ?

How many revolutions does the tire need to cover a distance of 200 Km?
($\pi \approx 3.14$)

Circumference = 376.8 cm

Number of revolutions = $\frac{20,000,000\text{cm}}{376.8\text{cm}} = 53078.6$ revolutions

22) Find the area of a circle with a radius of 12 cm ? ($\pi \approx 3.14$)

452.16 cm²

23) Circle M touches the sides of squares ABCD from the inside where AD = 12cm. Find the circumference and area of the shaded region ($\pi \approx 3.14$)

Perimeter of square = 48 cm

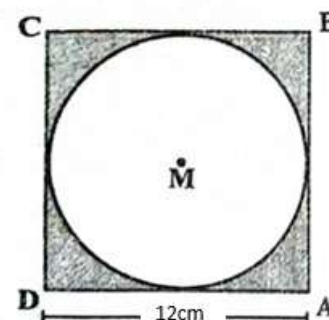
Circumference of the circle = 37.68 cm

Circumference of shaded = 85.68 cm

Area of square = 144 cm²

Area of the circle = 113.04 cm²

Area of shaded = 30.96 cm²



24) Right circular cylinder has a base diameter of 12 cm and a height of 8 cm. Find its volume, lateral area, and total area. ($\pi = 3.14$)

$$V = 904.32 \text{ cm}^3 \quad L.A = 301.44 \text{ cm}^2 \quad T.A = 527.52 \text{ cm}^2$$

25) Right circular cylinder has a volume of 1540 cm^3 and a base radius of 7 cm. Find its height, lateral area. ($\pi = \frac{22}{7}$)

$$H = 10 \text{ cm} \quad L.A = 440 \text{ cm}^2$$

26) A right quadrilateral prism has a square base with a side length of 8 cm and a height of 10 cm. Find the volume of the prism, its total area.

$$V = 640 \text{ cm}^3 \quad T.A = 448 \text{ cm}^2$$

27) A right triangular prism has a height of 10 cm and a volume of 120 cm^3 . Find the area of its base.

$$A = 12 \text{ cm}^2$$

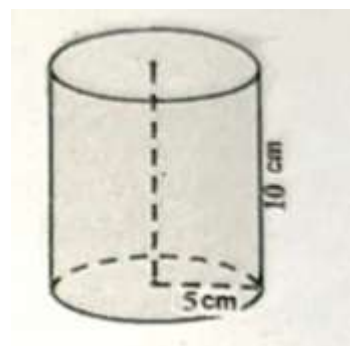
28) Which one has a larger volume? Right circular cylinder has a base diameter of 14 cm and a height of 10 cm, or a right quadrilateral prism has a square base with a side length of 10 cm and a height of 14 cm.

$$V \text{ of cylinder} = 1538 \text{ cm}^3 \quad V \text{ of prism} = 1400 \text{ cm}^3$$

Prism < cylinder

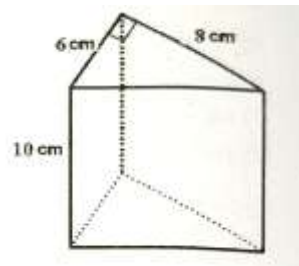
29) In the figure opposite: A right circular cylinder with a radius of 5 cm and a height of 10 cm. Find the volume of the cylinder.

$$V = 250\pi \text{ cm}^3$$



30) In the figure opposite: A right triangular prism with a height of 10 cm and a base that is a right triangle, with the lengths of the legs being 6 cm, 8 cm. Find the lateral area of the prism.

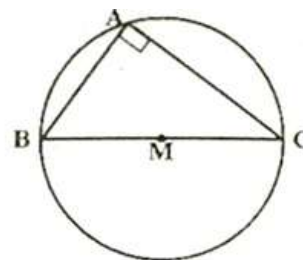
$$L.A = 240 \text{ cm}^2$$



31) In the figure opposite: $AB = 6 \text{ cm}$, $AC = 8 \text{ cm}$. Find the area and circumference of circle M in terms of π .

$$\text{circumference} = 10\pi \text{ cm}$$

$$\text{area} = 25\pi \text{ cm}^2$$



32) If $A(3, -5)$, $B(7, -2)$ find AB .

$$= 5 \text{ units}$$

33) If the distance between the two points $B(3, 2)$, $A(K, 8)$ is equal to 10 units of length find the value of K .

$$K = 11 \text{ or } -5$$

34) If $A(3, 1)$, $B(-5, 1)$, $C(-1, 4)$ prove that the points A, B, C are not collinear.

$$AB = 8 \text{ units}$$

$$BC = 5 \text{ units}$$

$$AC = 5 \text{ units}$$

$$AB \neq BC + AC$$

points A, B, C are not collinear.

35) If $A(0, 6)$, $B(6, 0)$, $C(2, -4)$, $D(-4, 2)$ prove that the points A, B, C, D are the vertices of a rectangle.

$$AB = 6\sqrt{2} \text{ units}$$

$$BC = 4\sqrt{2} \text{ units}$$

$$CD = 6\sqrt{2} \text{ units}$$



$$DA = 4\sqrt{2} \text{ units}$$

$$AB=CD, \quad BC=DA$$

$$AC = \sqrt{104} \text{ units}$$

$$BD = \sqrt{104} \text{ units}$$

$$AC=BD$$

points A,B,C,D are the vertices of a rectangle.

36) Find the area of the circle whose center is the point $M(-3,2)$ and passes through the point $A(3,-6)$

$$\text{Area} = 100 \pi \text{ cm}^2$$

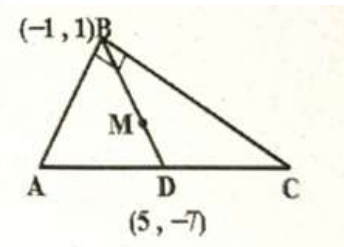
37) Find the circumference of the circle whose center is $M(15, 10)$ and passes through the point $A(3, -6)$.

$$\text{Radius} = 20 \text{ units}$$

$$\text{Circumference} = 2 \times \pi \times 20 = 40 \pi \text{ units}$$

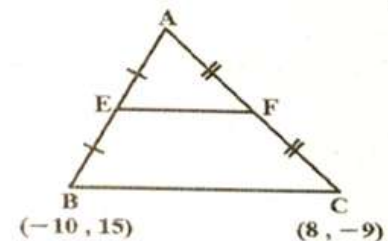
38) In the opposite figure, M is the intersection point of the medians of triangle ABC. Find AC.

$$AC = 20 \text{ units}$$



39) In the opposite figure, find EF.

$$EF = 15 \text{ units}$$



40) If the slope of the straight line passing through the two points $(k, 9)$, $(7, 2)$ is 7, find the value of k.

$$k = 4$$

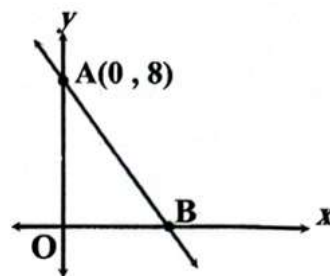
41) If the straight line passes through the two points (5, 1), (3, k) and is parallel to x-axis, find the value of k.

$$K = 1$$

42) In the opposite figure:

If the area of triangle OAB is 20 square units, find the slope of the straight line AB.

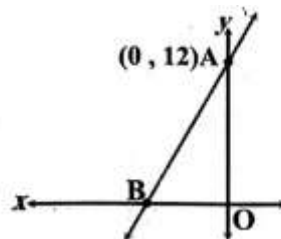
$$M = -\frac{8}{5}$$



43) In the opposite figure:

If the area of triangle OBA is 18 square units, find the slope of the straight line AB.

$$M = 4$$



حمل الآن

مجاناً وحصرياً

المراجعة رقم (5)

اختبار شهر ابريل



Model (1)

Question 1 : Choose the correct answer :

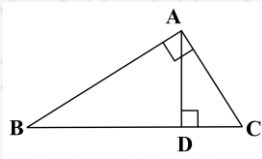
- 1 In the given figure :
Which of the following is true ?

(a) $(AB)^2 = BD \times DC$

(c) $(AB)^2 = BD \times BC$

(b) $(AB)^2 = BC \times AC$

(d) $(AB)^2 = BC \times DC$


- 2 The projection of a point on given a straight line is

(a) A point

(b) A line segment

(c) A ray

(d) Straight line
- 3 What is the area of the circle whose Radius length is 10 m ?

(a) $5\pi m^2$

(b) $10\pi m^2$

(c) $25\pi m^2$

(d) $100\pi m^2$
- 4 $\pi = \dots\dots\dots$

(a) $\frac{c}{r}$

(b) $\frac{c}{2r}$

(c) $\frac{2c}{r}$

(d) $\frac{c}{3r}$
- 5 A right circular cylinder whose have radius length is 5 cm, and its height is 15 cm what is the surface area ?

(a) $75\pi cm^2$

(b) $200\pi cm^2$

(c) $250\pi cm^2$

(d) $375\pi cm^2$
- 6 If the base of a right prism is an equilateral triangle with side length 5 cm and the height of the prism equals 4 cm what is the lateral area of the prism ?

(a) $15 cm^2$

(b) $30 cm^2$

(c) $60 cm^2$

(d) $240 cm^2$
- 7 The distance between the point (-7, -3) and the y-axis equals Units of length

(a) -7

(b) -3

(c) 7

(d) 3
- 8 What is the slope of the straight line passing through the two points A (-2, 3) B (5, 7) ?

(a) $\frac{7}{4}$

(b) $\frac{4}{7}$

(c) $\frac{4}{3}$

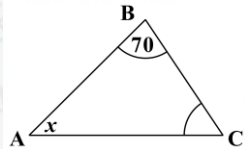
(d) $\frac{2}{3}$
- 9 What is the inequality that expresses that values of x that makes $BC > BA$?

(a) $70 < x < 180$

(c) $55 < x < 110$

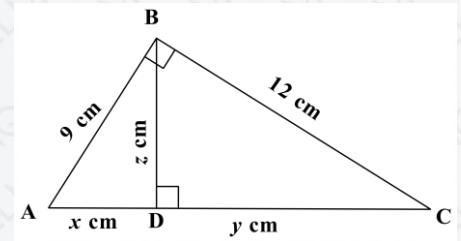
(b) $55 < x < 180$

(d) $0 < x < 55$



Question 2 : Answer the following questions :

- ① Find the value of x, y, z

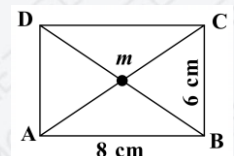


- ② If the slope of the straight line passing through two points $A(a+2, 3)$ $B(-a, -9)$ equals 2 find the value of a
- ③ Prove that the points $A(3, -2), B(4, 1), C(-2, 3), D(-3, 0)$ are vertices of a rectangle
- ④ Find the length of $\overline{AB} : A(2, 1), B(-2, 3)$
- ⑤ A quadrilateral prism whose base is in the shape of a square with a side length 4 cm and its volume is 192 cm^3 , find its surface area
- ⑥ A right circular cylinder whose height is 10 cm and its volume is 1540 cm^3
Find its total area
- ⑦ The area of a circle is 78.5 square feet. Find its radius length and circumference

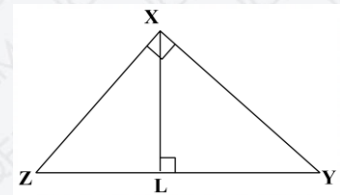
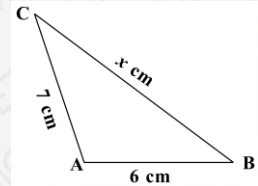
Model (2)

Question 1 : Choose the correct answer :

- ① ABCD is a rectangle what is the length of the projection of $\overrightarrow{MC}$ on $\overrightarrow{CB}$?
- Ⓐ 5 cm Ⓑ 3 cm
Ⓒ 4 cm Ⓓ 6 cm

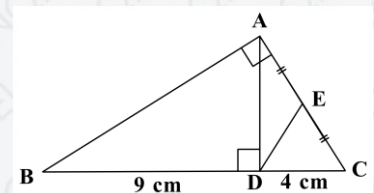


- 2 If $A(2,3), B(-1,k), k < 0$ what is the value of k that makes the length of $\overline{AB}$ equals 5 cm ?
 (a) -1 (b) -3 (c) -5 (d) -7
- 3 What is the area of the circle whose circumference = 14π cm ?
 (a) 7π cm² (b) 14π cm² (c) 49π cm² (d) 196π cm²
- 4 What are the possible values of x that make $m(\angle A) > m(\angle B)$
 (a) $6 < x < 7$ (b) $1 < x < 13$
 (c) $7 < x < 13$ (d) $x > 7$
- 5 If the slope of the straight line passing through the two points $(a, 3), (2, b)$ equals $\frac{1}{2}$ what is the value of a ?
 (a) $4 - 2b$ (b) $8 - 2b$ (c) $2b - 4$ (d) $2b - 8$
- 6 What is the area of the circle whose center is the point $A(-3, 5)$ and passes through point $B(9, -4)$?
 (a) 15π square units (b) 225π square units
 (c) 13π square units (d) 144π square units
- 7 What is the distance between the point $A(-3, 4)$ and the origin point ?
 (a) 3 units (b) 4 units (c) 5 units (d) 7 units
- 8 If the lateral area of a right circular cylinder equals $2\pi r^2$ cm² what is its height ?
 (a) $\frac{1}{2}r$ cm (b) r cm (c) $\frac{3}{4}r$ cm (d) $2r$ cm
- 9 $LZ \times yL =$
 (a) $(xL)^2$ (b) $(xy)^2$
 (c) $(xz)^2$ (d) $(yz)^2$



Question 2 : Answer the following questions :

- 1 Find the length of $\overline{DE}$?



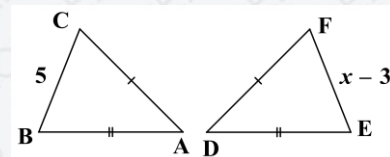
- 2 A right circular cylinder whose lateral area is $110 m^2$, and its base diameter length is 10m. find its volume and its total area
- 3 If the distance between two points $A(2, a), B(3, -1)$ equals $\sqrt{17}$ units of length find the possible values of a
- 4 If ABC is a triangle where $A(0,0), B(3,4), C(-4,3)$ find the perimeter of $\triangle ABC$
- 5 Prove that the points $A(1, -1), B(-1,0), C(3, -2)$ are collinear
- 6 The points in the given table lie on straight line find the slope of the straight line and value of k
- | | | | | |
|---|----|---|---|---|
| X | -3 | 2 | 7 | K |
| y | 0 | 2 | 4 | 6 |
- 7 A right circular cylinder whose base radius length equal to the edge length of a cube, the volume of the cube is $216 cm^3$ and its height is 12 cm, if the length of the base radius increases by 50% while keeping the height constant find the volume of the cylinder after the increase in terms of π

Model (3)

Question 1 : Choose the correct answer :

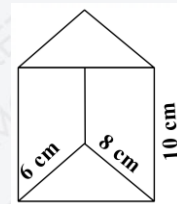
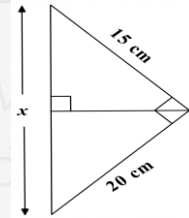
- 1 In the given figure:
If $m(\angle A) > m(\angle D)$ what is the possible value of x from the following

- (a) 2 (b) 3
(c) 7 (d) 9



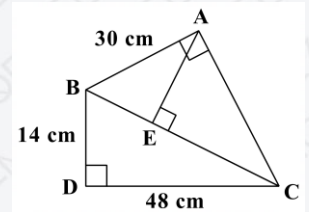
- 2 If $\vec{XY} \parallel \vec{AB}$, then the length of the projection of $\vec{AB}$ on $\vec{XY}$
- (a) $>$ (b) $<$ (c) $=$ (d) $>$
- 3 What is the projection of $\vec{AC}$ on $\vec{BC}$
- (a) $\vec{AD}$ (b) $\vec{DB}$ (c) $\vec{BC}$ (d) $\{D\}$

- 4 If the length of two side in triangle is 6cm and 3cm, what is interval does the length of the third side belong to
 (a) $[3,9[$ (b) $]3,9]$ (c) $[3,9]$ (d) $]3,9[$
- 5 in ΔABC : $m(\angle B) = 70^\circ$, $m(\angle C) = 50^\circ$ which of the following statements is true ?
 (a) $AB > AC$ (b) $AB < AC$ (c) $AB = AC$ (d) $BC > AC$
- 6 In the given figure:
 What is the value of x ?
 (a) 16 (b) 25
 (c) 12 (d) 20
- 7 In the given figure:
 What is the volume of the right triangular prism
 (a) 480 cm^3 (b) 240 cm^3
 (c) 2400 cm^3 (d) 120 cm^3
- 8 If the slope of the straight line pass through the points (3, 1), (k, -4) is undefined.
 What is the value of k ?
 (a) 3 (b) 1 (c) 5 (d) 6
- 9 What is the area of a circle with a diameter length 12 cm
 (a) $12\pi \text{ cm}^2$ (b) $44\pi \text{ cm}^2$ (c) $36\pi \text{ cm}^2$ (d) 6

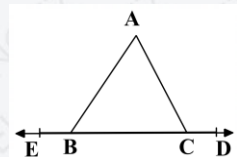


Question 2 : Answer the following questions :

- 1 In the following figure:
 ABC is a right-angled triangle at A, BDC is a right-angled triangle at D,
 $AE \perp BC$.
 Find: BC, AC, AE

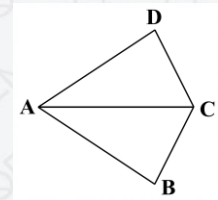


- 2 In the given figure:
 $AB > AC$
 Prove that $m(\angle ABE) > m(\angle ACD)$



3 If $\frac{c}{4x+5y} = \frac{b}{3y-x} = \frac{a}{2x+y}$, Prove that $\frac{4b+c}{17} = \frac{a+2b}{7}$

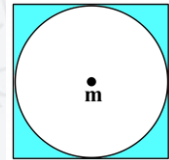
4 In the given figure
 $AB > BC, AD > DC$ prove that $m(\angle BCD) > m(\angle DAB)$



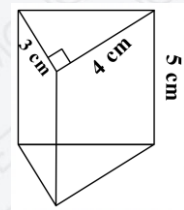
5 In the given figure:

If the area of the square equal 196 cm^2 then what is the area of the shaded part ?

Where $\left(\pi = \frac{22}{7}\right)$



6 Calculate the volume and lateral area of a triangular prism



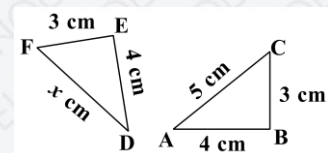
7 If $x = \left[0, 1, 2, \frac{1}{2}\right]$, and R is a relation on x “xRy” means “xy = 1” for each $x \in x$ $y \in x$ write the relation as a set of ordered pairs and represent it with an arrow diagram and state whether the relation is a function on x or not ? state the reason

Model (4)

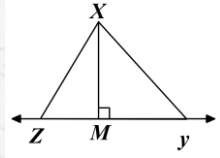
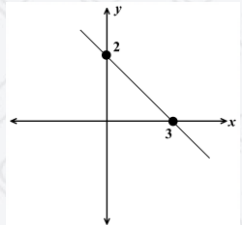
Question 1 : Choose the correct answer :

1 What are the values of x that make $m(\angle E) > m(\angle B)$?

- (a) $3 < x < 4$ (b) $5 < x < 7$
 (c) $5 < x$ (d) $x > 7$



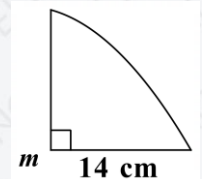
2 The sum of the length of any two sides in a triangle the length of the third side

- (a) Is less than (b) Is greater than
- (c) Is equal (d) Half
- 3 The projection of a line segment on a straight line that is not perpendicular to it is
- (a) A ray (b) A point
- (c) A line segment (d) A straight line
- 4 The projection of $\overline{XZ}$ on $\overline{YZ}$
- (a) $\overline{ZY}$ (b) MY
- (c) $\overline{MZ}$ (d) XM
- 
- 5 The circumference of a circle with a diameter of 10 cm =
- (a) 20π cm (b) 10π cm
- (c) 20π cm² (d) 10 cm
- 6 If the triangle ABC is right angled at A, $AB = AC = 8$ cm, $\overline{AD} \perp \overline{BC}$ $D \in \overline{BC}$ what is the length of $\overline{AD}$?
- (a) $8\sqrt{2}$ cm (b) 8 cm (c) $4\sqrt{2}$ cm (d) 4 cm
- 7 A right circular cylinder whose base radius length is r cm and its height is h cm what is its volume ?
- (a) $\frac{1}{2}\pi r^2 h$ cm³ (b) $\pi r^2 h$ cm³ (c) $2\pi r^2 h$ cm³ (d) $\pi r h^2$ cm³
- 8 The distance between the point $(\sqrt{2}, 4)$ and the origin equals units of length
- (a) $\sqrt{2}$ (b) $2\sqrt{2}$ (c) $3\sqrt{2}$ (d) $4\sqrt{2}$
- 9 What is the slope of the straight line
- (a) $\frac{2}{3}$ (b) $-\frac{2}{3}$
- (c) $\frac{3}{2}$ (d) $-\frac{3}{2}$
- 

Question 2 : Answer the following questions :

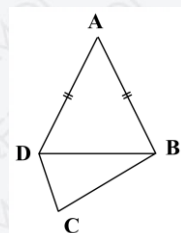
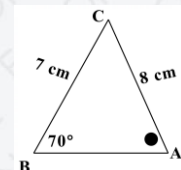
- 1 Prove that the points A (1, -1), B (-1, 0), C (3, -2) are collinear
- 2 Find the slope of $\overline{AB}$ in each of the following A(2, -3), B(2, 4)

- 3 Prove that the points $A(-6,2)$, $B(0,8)$, $C(-8,4)$ lie on the circle whose center is $M(-4,6)$ then find its area (where $\pi = 3.14$)
- 4 The dimensions of the rectangular base of a right quadrilateral prism are 4cm, 6cm and its volume is 120 cm^3 find its total area
- 5 Find the perimeter and area of the given figure . ($\pi = \frac{22}{7}$)
- 6 Find the circumference of a circle whose diameter length is 5.2 m and round the result to the nearest tenth ($\pi = 3.14$)
- 7 Draw a circle M with a radius length of 2 cm



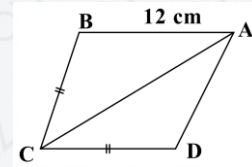
Model (5)

Question 1 : Choose the correct answer :

- 1 The length of any side in a triangle the sum of the length of the other two sides
 - a $>$
 - b $<$
 - c $=$
 - d Otherwise
- 2 $m(\angle DBC) < m(\angle BDC)$, $AB = AD$
then $m(\angle ABC) \dots\dots\dots m(\angle ADC)$

 - a $<$
 - b $>$
 - c $=$
 - d $\geq$
- 3 If $AB = 7 \text{ cm}$, $BC = 5 \text{ cm}$, $AC = 6 \text{ cm}$ then the smallest angle in measure is
 - a $\angle A$
 - b $\angle B$
 - c $\angle C$
 - d $\angle ABC$
- 4 In the given figure $m \angle A$ could be equal
 
 - a 70
 - b 80
 - c 60
 - d 75

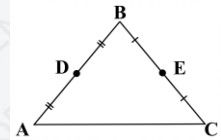
5 If $m(\angle BCA) > m(\angle ACD)$ what is the possible value of the $\overline{AD}$ from the following values ?

- (a) 11 cm (b) 12 cm
(c) 13 cm (d) 14 cm



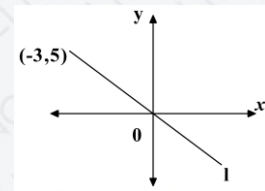
6 If D $(-1, -2)$, E $(2, 3)$ are the midpoints of $\overline{AB}$, $\overline{BC}$ respectively, what is the length of AC

- (a) $2\sqrt{34}$ (b) $\sqrt{34}$
(c) $2\sqrt{5}$ (d) $4\sqrt{5}$



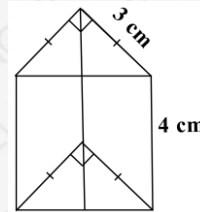
7 what is the slop of line l

- (a) $\frac{5}{3}$ (b) $\frac{3}{5}$
(c) $-\frac{5}{3}$ (d) $-\frac{3}{5}$



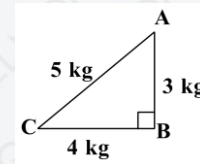
8 If the volume of right triangular prism equal $36 m^3$ what is the value of h

- (a) 6 (b) 8
(c) 10 (d) 12



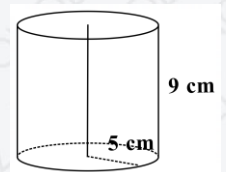
9 What is the slope of the road $\overleftrightarrow{AC}$?

- (a) $\frac{4}{3}$ (b) $\frac{3}{4}$
(c) $\frac{3}{5}$ (d) $\frac{4}{5}$



Question 2 : Answer the following questions :

1 In the figure opposite. A right circular cylinder with a radius of 5 cm and a height of 9 cm. Find the volume of the cylinder



2 Find the slope of straight line passing through the two points A(1,2)B(3,5)

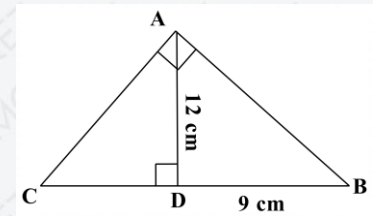
3 Find the distance between the point $(-4, 5)$ and the x-axis equal Unit of length

4 Which one has a larger volume? Right circular cylinder has a base diameter of 14 cm and a height of 10 cm, or a right quadrilateral prism has a square base with a side length of 10 cm and a height of 14 cm.

5 A piece of chocolate in the shape of a square prism with a height of 5 cm and a base in the shape of trapezoid. The length of the two parallel bases are 6 cm, 10 cm it is reshaped into small cubes of equal volume? Each cube with a side length of 2 cm, if the height of the trapezoid is 4 cm find the number of cubes

6 Find the length of $\overline{AB}$ in each of the following : $A(15,0), B(6,0)$

7 Find the length of $\overline{CD}$



Question 1 : Choose the correct answer :

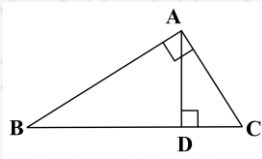
- 1 In the given figure :
Which of the following is true ?

(a) $(AB)^2 = BD \times DC$

(c) $(AB)^2 = BD \times BC$

(b) $(AB)^2 = BC \times AC$

(d) $(AB)^2 = BC \times DC$


- 2 The projection of a point on given a straight line is

(a) A point

(b) A line segment

(c) A ray

(d) Straight line
- 3 What is the area of the circle whose Radius length is 10 m ?

(a) $5\pi m^2$

(b) $10\pi m^2$

(c) $25\pi m^2$

(d) $100\pi m^2$
- 4 $\pi = \dots\dots\dots$

(a) $\frac{c}{r}$

(b) $\frac{c}{2r}$

(c) $\frac{2c}{r}$

(d) $\frac{c}{3r}$
- 5 A right circular cylinder whose have radius length is 5 cm, and its height is 15 cm what is the surface area ?

(a) $75\pi cm^2$

(b) $200\pi cm^2$

(c) $250\pi cm^2$

(d) $375\pi cm^2$
- 6 If the base of a right prism is an equilateral triangle with side length 5 cm and the height of the prism equals 4 cm what is the lateral area of the prism ?

(a) $15 cm^2$

(b) $30 cm^2$

(c) $60 cm^2$

(d) $240 cm^2$
- 7 The distance between the point (-7, -3) and the y-axis equals Units of length

(a) -7

(b) -3

(c) 7

(d) 3
- 8 What is the slope of the straight line passing through the two points A (-2, 3) B (5, 7) ?

(a) $\frac{7}{4}$

(b) $\frac{4}{7}$

(c) $\frac{4}{3}$

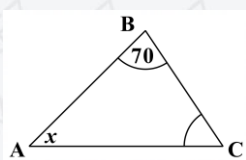
(d) $\frac{2}{3}$
- 9 What is the inequality that expresses that values of x that makes $BC > BA$?

(a) $70 < x < 180$

(c) $55 < x < 110$

(b) $55 < x < 180$

(d) $0 < x < 55$



Question 2 : Answer the following questions :

①

Find the value of x, y, z

$\triangle ABC$ right angled at B

$\overline{BD} \perp \overline{AC}$

$$AC = \sqrt{12^2 + 9^2} = 15 \text{ cm}$$

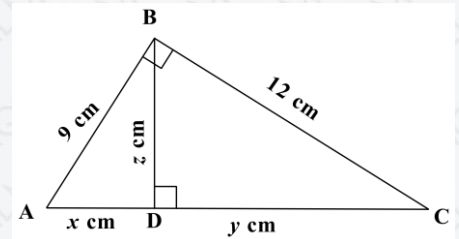
$$(AB)^2 = AD \times AC \quad \therefore 9^2 = 15 \times x$$

$$x = \frac{81}{15} = 5.4$$

$$y = 15 - 5.4 = 9.6$$

$$BD = \frac{AB \times BC}{AC}$$

$$z = \frac{9 \times 12}{15} = 7.2$$



②

If the slope of the straight line passing through two points A ($a+2, 3$) B ($-a, -9$) equals 2 find the value of a

$$\frac{-9 - 3}{-a - (a + 2)} = 2 \rightarrow \frac{-12}{-a - a - 2} = 2$$

$$\frac{-12}{-2a - 2} = 2 \rightarrow 2(-2a - 2) = -12$$

$$-4a - 4 = -12$$

$$-4a = -12 + 4$$

$$-4a = -8$$

$$a = 2$$

③

Prove that the points A(3, -2), B(4,1), C(-2,3), D(-3,0) are vertices of a rectangle

$$AB = \sqrt{(4 - 3)^2 + (1 + 2)^2} = \sqrt{10} \text{ units of length}$$

$$BC = \sqrt{(-2 - 4)^2 + (3 - 1)^2} = \sqrt{40} \text{ units of length}$$

$$CD = \sqrt{(-3 + 2)^2 + (0 - 3)^2} = \sqrt{10} \text{ units of length}$$

$$DA = \sqrt{(3 + 3)^2 + (-2 - 0)^2} = \sqrt{40} \text{ units of length}$$

$$\therefore AB = CD \quad BC = DA$$

$$AC = \sqrt{(3 + 2)^2 + (-2 - 3)^2} = \sqrt{50} \text{ units of length}$$

$$BD = \sqrt{(-3 - 4)^2 + (0 - 1)^2}$$

$$BD = \sqrt{50} \text{ units of length}$$

$$\therefore AC = BD \quad \therefore \text{diagonals are equal.}$$

$$\therefore ABCD \text{ rectangle}$$

- 4 Find the length of $\overline{AB}$: $A(2,1), B(-2,3)$

$$A, B = \sqrt{(-2 - 2)^2 + (3 - 1)^2} = 2\sqrt{5} \text{ units}$$

- 5 A quadrilateral prism whose base is in the shape of a square with a side length 4 cm and its volume is 192 cm^3 , find its surface area

$$\text{Base area} = 4 \times 4 = 16 \text{ cm}^2$$

$$\text{Height of the prism} = \frac{\text{volume}}{\text{base area}} = \frac{192}{16} = 12 \text{ cm}$$

$$\text{Perimeter of the base} = 4 \times 4 = 16 \text{ cm}$$

$$\text{Lateral area} = \text{perimeter} \times \text{height}$$

$$= 16 \times 12 = 192 \text{ cm}^2$$

$$\text{Surface area} = 192 + 16 \times 2 = 224 \text{ cm}^2$$

- 6 A right circular cylinder whose height is 10 cm and its volume is 1540 cm^3
Find its total area

$$V = \pi r^2 h \rightarrow \pi r^2 h = 1540$$

$$\frac{22}{7} \times r^2 \times 10 = 1540$$

$$\frac{220}{7} r^2 = 1540$$

$$r^2 = 1540 \times \frac{7}{220} = 49 \text{ cm}^2$$

$$\therefore r = 7 \text{ cm}$$

$$S.A = 2\pi r(h + r)$$

$$= 2 \times \frac{22}{7} \times 7(10 + 7)$$

$$SA = 748 \text{ cm}^2$$

- 7 The area of a circle is 78.5 square feet. Find its radius length and circumference

$$A = \pi r^2 \rightarrow 3.14r^2 = 78.5$$

$$r^2 = 25 \rightarrow r = 5 \text{ feet}$$

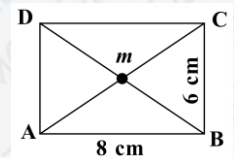
$$c = 2\pi r = 2 \times 3.14 \times 5 = 31.4 \text{ feet}$$

Model (2)

Question 1 : Choose the correct answer :

- 1 ABCD is a rectangle what is the length of the projection of $\overline{MC}$ on $\overline{CB}$?

- (a) 5 cm (b) 3 cm
(c) 4 cm (d) 6 cm



- 2 If $A(2,3), B(-1,k), k < 0$ what is the value of k that makes the length of $\overline{AB}$ equals 5 cm ?

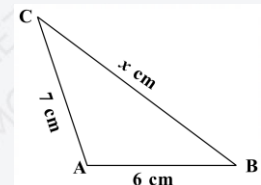
- (a) -1 (b) -3 (c) -5 (d) -7

- 3 What is the area of the circle whose circumference = $14\pi \text{ cm}$?

- (a) $7\pi \text{ cm}^2$ (b) $14\pi \text{ cm}^2$ (c) $49\pi \text{ cm}^2$ (d) $196\pi \text{ cm}^2$

- 4 What are the possible values of x that make $m(\angle A) > m(\angle B)$

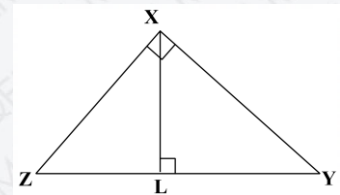
- (a) $6 < x < 7$ (b) $1 < x < 13$
(c) $7 < x < 13$ (d) $x > 7$



- 5 If the slope of the straight line passing through the two points $(a, 3), (2, b)$ equals $\frac{1}{2}$ what is the value of a ?

- (a) $4 - 2b$ (b) $8 - 2b$ (c) $2b - 4$ (d) $2b - 8$

- 6 What is the area of the circle whose center is the point A (-3, 5) and passes through point B (9, -4) ?
- (a) 15π square units (b) 225π square units
- (c) 13π square units (d) 144π square units
- 7 What is the distance between the point A (-3, 4) and the origin point ?
- (a) 3 units (b) 4 units (c) 5 units (d) 7 units
- 8 If the lateral area of a right circular cylinder equals $2\pi r^2$ cm² what is its height ?
- (a) $\frac{1}{2}r$ cm (b) r cm (c) $\frac{3}{4}r$ cm (d) $2r$ cm
- 9 $LZ \times yL =$
- (a) $(xL)^2$ (b) $(xy)^2$
- (c) $(xz)^2$ (d) $(yz)^2$



Question 2 : Answer the following questions :

- 1 Find the length of $\overline{DE}$?

ΔABC is right angle at (A)

$$(AC)^2 = CD \times CB$$

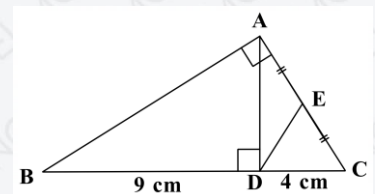
$$(AC)^2 = 4 \times 13 = 52$$

$$AC = \sqrt{52} = 2\sqrt{13} \text{ cm}$$

E midpoint of $\overline{AC}$

In $\Delta ADC \rightarrow \overline{DE}$ is a median

$$DE = \frac{1}{2}AC = \frac{1}{2} \times 2\sqrt{13} = \sqrt{13} \text{ cm}$$



- 2 A right circular cylinder whose lateral area is 110 m^2 , and its base diameter length is 10m. find its volume and its total area

$$L.A = 2\pi rh$$

$$110 = 2 \left(\frac{22}{7} \right) \times \frac{10}{2} \times h \quad h = 3.5 \text{ m}$$

$$V = \pi r^2 h = \frac{22}{7} \times (5)^2 \times 3.5 = 275 \text{ m}^3$$

$$S.A = 2\pi r(h + r) = 2\pi \times 5(3.5 + 5) = 267.1 \text{ m}^2$$

- 3 If the distance between two points $A(2, a)$, $B(3, -1)$ equals $\sqrt{17}$ units of length find the possible values of a

$$\begin{aligned}
 d &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\
 &= \sqrt{(3 - 2)^2 + (-1 - a)^2} = \sqrt{17} \\
 (1)^2 + (-1 - a)^2 &= 17 \\
 (-1 - a)^2 &= 16 \\
 -1 - a &= \sqrt{16} \\
 -1 - a &= \pm 4 \\
 \begin{array}{ll}
 -1 - a = 4 & -1 - a = -4 \\
 -a = 5 & -a = -3 \\
 a = -5 & a = 3
 \end{array}
 \end{aligned}$$

- 4 If ABC is a triangle where $A(0,0)$, $B(3,4)$, $C(-4,3)$ find the perimeter of $\triangle ABC$

$$\begin{aligned}
 AB &= \sqrt{x^2 + y^2} = \sqrt{3^2 + 4^2} = \sqrt{25} = 5 \text{ units} \\
 BC &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} = \sqrt{(-4 - 3)^2 + (3 - 4)^2} \\
 &= \sqrt{(-7)^2 + (-1)^2} = \sqrt{50} \\
 &= 5\sqrt{2} \text{ units} \\
 CA &= \sqrt{x^2 + y^2} = \sqrt{(-4)^2 + (3)^2} \\
 &= \sqrt{25} = 5 \text{ units} \\
 \text{Perimeter of } \triangle ABC &= 5 + 5\sqrt{2} + 5 \\
 &= 10 + 5\sqrt{2} \text{ units}
 \end{aligned}$$

- 5 Prove that the points $A(1, -1)$, $B(-1,0)$, $C(3, -2)$ are collinear

$$\text{The slope of } \overleftrightarrow{AB} = m_1$$

$$\text{Slope of } \overleftrightarrow{BC} = m_2$$

$$m_1 = \frac{0 - (-1)}{-1 - 1} = \frac{1}{-2} = \frac{-1}{2}$$

$$m_2 = \frac{-2 - 0}{3 - (-1)} = \frac{-2}{4} = \frac{-1}{2}$$

$$m_1 = m_2$$

The points A, B, C, are collinear

6

The points in the given table lie on straight line find the slope of the straight line and value of k

X	-3	2	7	K
y	0	2	4	6

Assuming: $A(-3,0), B(2,2)$

$$m_1 = \frac{2 - 0}{2 - (-3)} = \frac{2}{2 + 3} = \frac{2}{5}$$

Assuming: $B(2,2), C(k, 6)$

$$m_2 = \frac{6 - 2}{k - 2} = \frac{4}{k - 2}$$

$$m_1 = m_2 \rightarrow \frac{4}{k - 2} = \frac{2}{5}$$

$$2(k - 2) = 20$$

$$2k - 4 = 20 \rightarrow 2k = 24$$

$$k = 12$$

7

A right circular cylinder whose base radius length equal to the edge length of a cube, the volume of the cube is 216 cm^3 and its height is 12 cm, if the length of the base radius increases by 50% while keeping the height constant find the volume of the cylinder after the increase in terms of π

$$\text{Volume} = 216 \text{ cm}^3$$

$$L^3 = 216 \quad L = 6 \text{ cm}$$

$$\text{Increase in the radius} = 6 \times 50\% = 3 \text{ cm}$$

Radius after the increase = $3 + 6 = 9 \text{ cm}$

Volume of the cylinder after the increase = $\pi r^2 h$

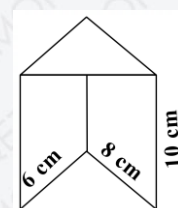
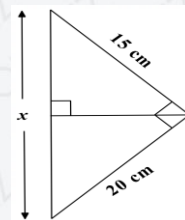
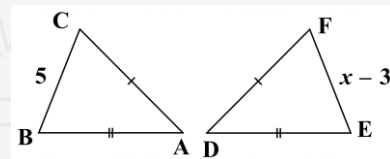
$$= \pi(9)^2 \times 12$$

$$= \pi 972 \text{ cm}^3$$

Model (3)

Question 1 : Choose the correct answer :

- ① In the given figure:
If $m(\angle A) > m(\angle D)$ what is the possible value of x from the following
 (a) 2 (b) 3
 (c) 7 (d) 9
- ② If $\overrightarrow{XY} \parallel \overline{AB}$, then the length of the projection of $\overline{AB} \parallel \overrightarrow{XY}$
 (a) $>$ (b) $<$ (c) = (d) $\leq$
- ③ What is the projection of $\overline{AC}$ on $\overline{BC}$
 (a) $\overline{AD}$ (b) $\overline{DB}$ (c) $\overline{BC}$ (d) $\{D\}$
- ④ If the length of two side in triangle is 6cm and 3cm, what is interval does the length of the third side belong to
 (a) $[3,9[$ (b) $]3,9]$ (c) $[3,9]$ (d) $]3,9[$
- ⑤ in ΔABC : $m(\angle B) = 70^\circ$, $m(\angle C) = 50^\circ$ which of the following statements is true ?
 (a) $AB > AC$ (b) $AB < AC$ (c) $AB = AC$ (d) $BC > AC$
- ⑥ In the given figure:
What is the value of x ?
 (a) 16 (b) 25
 (c) 12 (d) 20
- ⑦ In the given figure:
What is the volume of the right triangular prism
 (a) 480 cm^3 (b) 240 cm^3
 (c) 2400 cm^3 (d) 120 cm^3



8 If the slope of the straight line pass through the points (3, 1), (k, -4) is undefined. What is the value of k ?

- (a) 3 (b) 1 (c) 5 (d) 6

9 What is the area of a circle with a diameter length 12 cm

- (a) $12\pi \text{ cm}^2$ (b) $44\pi \text{ cm}^2$ (c) $36\pi \text{ cm}^2$ (d) 6

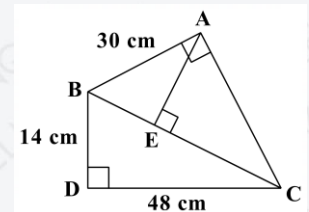
Question 2 : Answer the following questions :

1 In the following figure:
ABC is a right-angled triangle at A, BDC is a right-angled triangle at D,
 $AE \perp BC$.
Find: BC, AC, AE

$$\begin{aligned} \text{In } \triangle ABC \\ BC^2 &= CD^2 + BD^2 \\ &= 48^2 + 14^2 \\ BC^2 &= 2500 \\ \therefore BC &= 50 \text{ cm} \end{aligned}$$

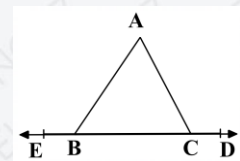
$$\begin{aligned} \text{In } \triangle ABC \\ AC^2 &= 1600 \\ \therefore AC &= 40 \text{ cm} \end{aligned}$$

$$\begin{aligned} \text{In } \triangle ABC \\ AE &= \frac{AC \times AB}{BC} \\ &= \frac{40 \times 30}{50} \\ AE &= 24 \text{ cm} \end{aligned}$$



2 In the given figure:
 $AB > AC$
Prove that $m(\angle ABE) > m(\angle ACD)$

$$\begin{aligned} \therefore AB &> AC \\ \therefore m\angle ACB &> m\angle ABC \\ m(\angle ABE) &= 180 - m\angle ABC \\ m(\angle ACD) &= 180 - m\angle ACB \\ \therefore m(\angle ABE) &> m(\angle ACD) \end{aligned}$$



3

If $\frac{c}{4x+5y} = \frac{b}{3y-x} = \frac{a}{2x+y}$

Prove that $\frac{4b+c}{17} = \frac{a+2b}{7}$

Multiply the second by 4 and adding the first

$$\frac{4b+c}{4(3y-x) + (4x+5y)} = \frac{4b+c}{12y-4x+4x+5y} = \frac{4b+c}{17y} \rightarrow 1$$

Multiply the second by 2 + the third

$$\frac{a+2b}{(2x+y) + 2(3y-x)} = \frac{a+2b}{2x+y+6y-2x} = \frac{a+2b}{7y} \rightarrow 2$$

$$\frac{4b+c}{17y} = \frac{a+2b}{7y}$$

$$\frac{4b+c}{17} = \frac{a+2b}{7}$$

4

In the given figure

$AB > BC, AD > DC$ prove that $m(\angle BCD) > m(\angle DAB)$

$$\because AB > BC$$

$$\therefore m(\angle ACB) > m(\angle BAC) \rightarrow 1$$

$$\because AD > DC$$

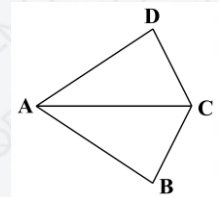
$$\therefore m(\angle ACD) > m(\angle DAC) \rightarrow 2$$

Add 1 and 2

$$m(\angle ACB) + m(\angle ACD) > m(\angle BAC) + m(\angle BCD)$$

$$\therefore m(\angle BAC) + m(\angle DAC) = m(\angle DAB)$$

$$\therefore m(\angle BAC)$$



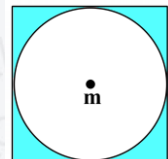
5

In the given figure:

If the area of the square equal 196 cm^2 then what is the area of the shaded part ?

Where $\left(\pi = \frac{22}{7}\right)$

$$s = \sqrt{196} = 14$$

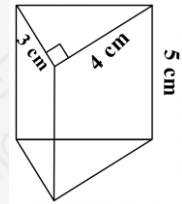


$$\begin{aligned}\text{Area of circle} &= \pi r^2 = \frac{22}{7} \times 7^2 \\ &= 22 \times 7 = 154 \text{ cm}^2\end{aligned}$$

$$\text{Area of shaded part} = 196 - 154 = 42$$

- 6 Calculate the volume and lateral area of a triangular prism

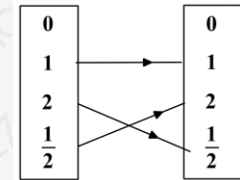
$$\begin{aligned}\text{Volume} &= \text{area of base} \times h \\ &= \frac{1}{2} \times 4 \times 3 \times 5 = 30 \text{ cm}^3\end{aligned}$$



$$\begin{aligned}\text{Lateral area} &= \text{perimeter of base} \times \text{high} \\ &= (3 + 4 + 5) \times 5 \\ &= 12 \times 5 = 60 \text{ cm}^2\end{aligned}$$

- 7 If $x = \left[0, 1, 2, \frac{1}{2}\right]$, and R is a relation on x “xRy” means “xy = 1” for each $x \in x$ $y \in x$ write the relation as a set of ordered pairs and represent it with an arrow diagram and state whether the relation is a function on x or not ? state the reason

$$R = \left\{ (1, 1), \left(2, \frac{1}{2}\right), \left(\frac{1}{2}, 2\right) \right\}$$

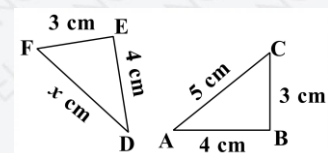


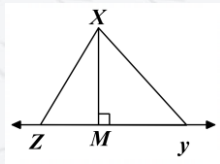
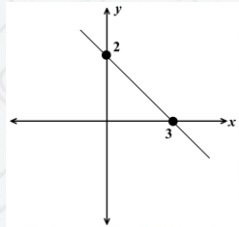
Not function because 0 has no corresponding value in the relation

Model (4)

Question 1 : Choose the correct answer :

- 1 What are the values of x that make $m(\angle E) > m(\angle B)$?
- (a) $3 < x < 4$ (b) $5 < x < 7$
- (c) $5 < x$ (d) $x > 7$



- 2 The sum of the length of any two sides in a triangle the length of the third side
- (a) Is less than (b) **Is greater than**
- (c) Is equal (d) Half
- 3 The projection of a line segment on a straight line that is not perpendicular to it is
- (a) A ray (b) A point
- (c) **A line segment** (d) A straight line
- 4 The projection of $\overline{XZ}$ on $\overline{YZ}$
- (a) $\overline{ZY}$ (b) MY
- (c) **$\overline{MZ}$** (d) XM
- 
- 5 The circumference of a circle with a diameter of 10 cm =
- (a) 20π cm (b) **10π cm**
- (c) 20π cm² (d) 10 cm
- 6 If the triangle ABC is right angled at A, $AB = AC = 8$ cm, $\overline{AD} \perp \overline{BC}$ $D \in \overline{BC}$ what is the length of $\overline{AD}$?
- (a) $8\sqrt{2}$ cm (b) 8 cm (c) **$4\sqrt{2}$ cm** (d) 4 cm
- 7 A right circular cylinder whose base radius length is r cm and its height is h cm what is its volume ?
- (a) $\frac{1}{2}\pi r^2 h$ cm³ (b) **$\pi r^2 h$ cm³** (c) $2\pi r^2 h$ cm³ (d) $\pi r h^2$ cm³
- 8 The distance between the point $(\sqrt{2}, 4)$ and the origin equals units of length
- (a) $\sqrt{2}$ (b) $2\sqrt{2}$ (c) **$3\sqrt{2}$** (d) $4\sqrt{2}$
- 9 What is the slope of the straight line
- (a) $\frac{2}{3}$ (b) **$-\frac{2}{3}$**
- (c) $\frac{3}{2}$ (d) $-\frac{3}{2}$
- 

Question 2 : Answer the following questions :

- 1 Prove that the points A (1, -1), B (-1, 0), C (3, -2) are collinear
- The slope of $\overline{AB} = m_1$
- The slope of $\overline{BC} = m_2$

$$m_1 = \frac{0 - (-1)}{-1 - 1} = \frac{1}{-2} = -\frac{1}{2}, m_2 = \frac{-2 - 0}{3 - (-1)} = -\frac{1}{2}$$

$$\therefore m_1 = m_2$$

$\therefore$ the point A, B, C are collinear

- ② Find the slope of $\overleftrightarrow{AB}$ in each of the following A(2, -3), B(2, 4)

$$m = \frac{y_2 - y_1}{x_2 - x_1} \therefore m = \frac{4 - (-3)}{2 - 2} = \frac{4 + 3}{0}$$

$\therefore$ The slope of $\overleftrightarrow{AB}$ is undefined

- ③ Prove that the points A(-6, 2), B(0, 8), C(-8, 4) lie on the circle whose center is M(-4, 6) then find its area (where $\pi = 3.14$)

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$MA = \sqrt{(-6 + 4)^2 + (2 - 6)^2} = \sqrt{4 + 16} = \sqrt{20} = 2\sqrt{5}$$

$$MB = \sqrt{(0 + 4)^2 + (8 - 6)^2} = \sqrt{20} = 2\sqrt{5}$$

$$MC = \sqrt{(-8 + 4)^2 + (4 - 6)^2} = \sqrt{20} = 2\sqrt{5}$$

$$MA = MB = MC$$

$\therefore$ the points A, B, C lie on the circle M

$$r = 2\sqrt{5}$$

$$A = \pi r^2 = 3.14 \times (2\sqrt{5})^2 = 62.8 \text{ square unit}$$

- ④ The dimensions of the rectangular base of a right quadrilateral prism are 4cm, 6cm and its volume is 120 cm^3 find its total area

The base area = $6 \times 4 = 24 \text{ cm}^2$

The height of prism = $\frac{\text{volume}}{\text{base area}} = \frac{120}{24} = 5 \text{ cm}$

The lateral area = $2 \times (6 + 4) \times 5 = 100 \text{ cm}^2$

The total area = $100 + 24 \times 2 = 148 \text{ cm}^2$

- 5 Find the perimeter and area of the given figure . $(\pi = \frac{22}{7})$

$$c = 2\pi r = 2 \times \frac{22}{7} \times 14 = 88$$

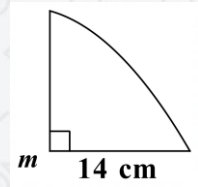
The length of $\frac{1}{4}$ of the circumference

$$\frac{1}{4} \times 88 = 22 \text{ cm}$$

The perimeter of the figure = the length of $\frac{1}{4}$ a feure

$$+r + r = 22 + 14 + 14 = 50 \text{ cm}$$

$$\text{The area of the figure} = \frac{1}{4}\pi r^2 = \frac{1}{4} \times \frac{22}{7} \times (14)^2 = 154 \text{ cm}^2$$



- 6 Find the circumference of a circle whose diameter length is 5.2 m and round the result to the nearest tenth $(\pi = 3.14)$

$$c = \pi d \quad c = 5.2\pi$$

$$c = 5.2 \times 3.14 = 16.3 \text{ meters}$$

To the nearest tenth

$$\therefore C = 16 \text{ m}$$

- 7 Draw a circle M with a radius length of 2 cm

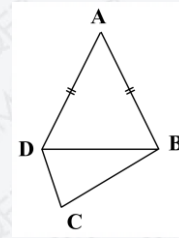
Model (5)

Question 1 : Choose the correct answer :

- 1 The length of any side in a triangle the sum of the length of the other two sides
- (a) $>$ (b) $<$ (c) $=$ (d) Otherwise

- 2 $m(\angle DBC) < m(\angle BDC), AB = AD$
then $m(\angle ABC) \dots\dots\dots m(\angle ADC)$

(a) (b) $>$
(c) $=$ (d) $\geq$

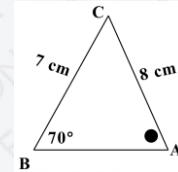


- 3 If $AB = 7\text{ cm}, BC = 5\text{ cm}, AC = 6\text{ cm}$ then the smallest angle in measure is

(a) (b) $\angle B$ (c) $\angle C$ (d) $\angle ABC$

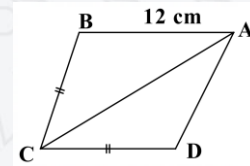
- 4 In the given figure $m\angle A$ could be equal

(a) 70 (b) 80
(c) (d) 75



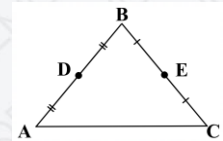
- 5 If $m(\angle BCA) > m(\angle ACD)$ what is the possible value of the $\overline{AD}$ from the following values ?

(a) (b) 12 cm
(c) 13 cm (d) 14 cm



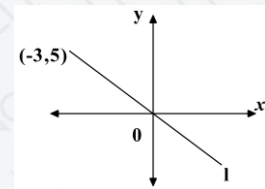
- 6 If D $(-1, -2)$, E $(2, 3)$ are the midpoints of $\overline{AB}$, $\overline{BC}$ respectively, what is the length of AC

(a) (b) $\sqrt{34}$
(c) $2\sqrt{5}$ (d) $4\sqrt{5}$



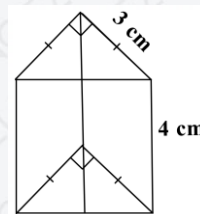
- 7 what is the slop of line l

(a) $\frac{5}{3}$ (b) $\frac{3}{5}$
(c) (d) $-\frac{3}{5}$



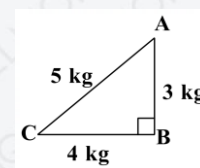
- 8 If the volume of right triangular prism equal 36 m^3 what is the value of h

(a) 6 (b)
(c) 10 (d) 12



- 9 What is the slope of the road $\overleftrightarrow{AC}$?

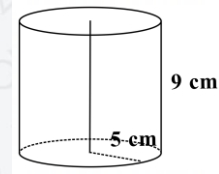
(a) $\frac{4}{3}$ (b)
(c) $\frac{3}{5}$ (d) $\frac{4}{5}$



Question 2 : Answer the following questions :

- ① In the figure opposite. A right circular cylinder with a radius of 5 cm and a height of 9 cm. Find the volume of the cylinder

$$\begin{aligned}
 V &= b.a \times h \\
 b.a &= \pi r^2 = \frac{22}{7} \times (5)^2 \\
 V &= \frac{22}{7} \times 5^2 \times 9 \\
 V &= 2475 \text{ cm}^3
 \end{aligned}$$



- ② Find the slope of straight line passing through the two points A(1,2)B(3,5)

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{5 - 2}{3 - 1} = \frac{3}{2}$$

Slope of the straight line = $\frac{3}{2}$

- ③ Find the distance between the point (-4, 5) and the x-axis equal Unit of length

$$\text{Distance} = 5$$

- ④ Which one has a larger volume? Right circular cylinder has a base diameter of 14 cm and a height of 10 cm, or a right quadrilateral prism has a square base with a side length of 10 cm and a height of 14 cm.

$$\begin{aligned}
 V \text{ of cylinder} &= b.a \times h \\
 b.a &= \pi r^2 \quad d = 14 \text{ cm} \\
 &= \pi \times (7)^2 \quad \therefore r = 7 \text{ cm} \\
 \therefore \text{Volume by cylinder} &= 49 \times \frac{22}{7} \times 10 = 1540 \text{ cm}^3 \\
 b.a \text{ of square} &= 10 \times 10 = 100 \text{ cm}^2 \\
 \text{Volume of prism} &= b.a \times h \\
 &= 100 \times 14 \\
 &= 1400 \text{ cm}^3 \\
 \therefore \text{Volume of cylinder} &> \text{Volume of prism}
 \end{aligned}$$

- 5 A piece of chocolate in the shape of a square prism with a height of 5 cm and a base in the shape of trapezoid. The length of the two parallel bases are 6 cm, 10 cm it is reshaped into small cubes of equal volume? Each cube with a side length of 2 cm, if the height of the trapezoid is 4 cm find the number of cubes

$$\text{Volume prism} = \text{base area} \times h$$

$$\frac{1}{2} (6 + 10) \times 4 \times 5 = 160 \text{ cm}^3$$

$$\text{Volume cube} = 2 \times 2 \times 2 = 8 \text{ cm}^3$$

$$\text{Number of small cubes} = \frac{160}{8} = 20 \text{ cube}$$

- 6 Find the length of $\overline{AB}$ in each of the following : $A(15,0), B(6,0)$

$$\overline{AB} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\overline{AB} = \sqrt{(6 - 15)^2 + (0 - 0)^2}$$

$$\overline{AB} = \sqrt{81} = 9 \text{ unit of length}$$

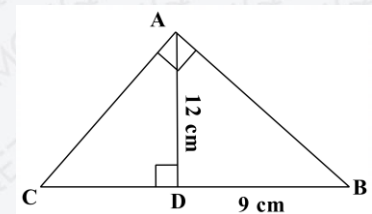
- 7 Find the length of $\overline{CD}$

$$(AD)^2 = BD \times CD$$

$$(12)^2 = 9 \times CD$$

$$\therefore 144 = 9 \times CD$$

$$CD = \frac{144}{9} = 16 \text{ cm}$$



كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9

